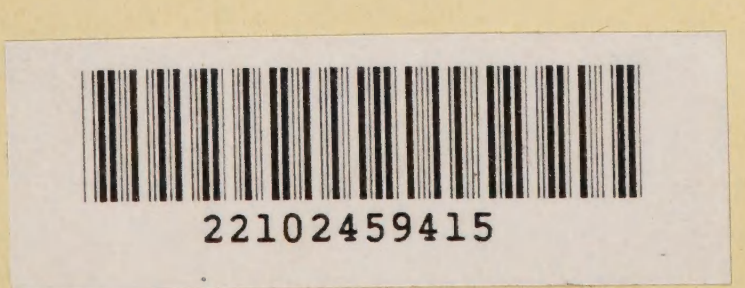
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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JULY—DECEMBER,

1856.

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

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Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

VOL. XXIV.

JULY—DECEMBER, 1856.

LONDON:

JOHN CHURCHILL, NEW BURLINGTON STREET.

EDINBURGH: MACLACHLAN & CO.

DUBLIN: FANNIN & CO.

MDCCCLVII.

Vol. XXV will appear on the 1st of July, 1857.

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*Effects of Colour upon Health.*
By "A Correspondent of the Builder."

(*Edinburgh Medical Journal*, June, 1856.)

"FROM several years' observations in rooms of various sizes, used as manufacturing rooms, and occupied by females for twelve hours per day, I found that the workers who occupied those rooms which had large windows with large panes of glass, in the four sides of the room, so that the sun's rays penetrated through the room during the whole day, were much more healthy than the workers who occupied rooms lighted from one side only, or rooms lighted through very small panes of glass. I observed another very singular fact—viz., that the workers who occupied one room were very cheerful and healthy, while the occupiers of another similar room, who were employed on the same kind of work, were all inclined to melancholy, and complained of pains in the forehead and eyes, and were often ill and unable to work. Upon examining the rooms in question, I found they were both equally well ventilated and lighted. I could not discover anything

about the drainage of the premises that could affect the one room more than the other; but I observed that the room occupied by the cheerful workers was wholly whitewashed, and the room occupied by the melancholy workers was coloured with yellow ochre. I had the yellow ochre all washed off, and the walls and ceilings whitewashed. The workers ever after felt more cheerful and healthy."

ART. 2.—*The relation of Teetotalism to the diseases of Europeans in India.* By Mr. WARING.

(*Indian Annals of Medical Science*, April, 1856.)

In some admirable notes on the diseases of India, Mr. Waring gives a table which tends to point out that in India a teetotaller is more liable to fever than a person who drinks moderately, or even immoderately. Thus:

Showing the Sickness and Mortality amongst three classes of Men with Fever, in six European Regiments, serving in the Madras Presidency, in 1849.

Class.	Strength of each Class.	Fever Admissions.	Fever Deaths.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Per cent. of Deaths to Admissions.
Teetotallers . . .	450	141	1	31·33	0·22	0·70
Temperate . . .	4318	768	1	17·78	0·02	0·13
Intemperate . . .	942	190	2	20·16	0·21	1·05

Though teetotallers are more liable to fever in India, they are, however, more exempt from some other diseases, and the balance of chances after all inclines considerably in their favour. This appears in another table which Mr. Waring gives in an appendix to his paper, and which represents the experience of the European troops in the Madras Presidency in 1849:

Classes.	Teetotallers.				Temperate.				Intemperate.			
Strength.	450.				4318.				940.			
Diseases.	Admissions.	Deaths.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Admissions.	Deaths.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Admissions.	Deaths.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.
Fevers	141	1	31·33	0·22	768	1	17·78	0·02	190	2	20·16	0·21
Cholera	...	...	...	...	17	13	0·39	0 30	7	6	0·74	0·63
Dysentery	52	3	11·55	0·66	344	31	7·96	0·71	112	15	11·88	1·59
Diarrhœa	50	1	11·11	0·22	348	4	8 05	0·09	108	...	11·46	...
Other diseases of stomach and bowels	23	...	5·11	...	337	6	7·80	0·13	112	2	11·88	0·21
Hepatitis	26	...	5·77	...	249	16	5·76	0·37	96	2	10·19	0·21
Disease of lungs	43	...	9·55	...	478	17	11·06	0·39	113	4	11·99	0·42
Disease of brain	14	...	3·11	...	108	1	2·50	0 02	82	5	8·70	0·53
Rheumatic affections	27	...	6·00	...	487	...	11·27	...	143	1	15·18	0·10
Venereal affections	94	...	20·88	...	1414	1	35·06	0·02	477	...	50·63	...
Other diseases	119	...	26·44	...	1464	10	33·89	0·23	584	5	61·98	0·53
	589	5	130·88	1·11	6114	100	141·59	2·315	2024	42	214·86	4·45

The following short table will place the above figures in a stronger light:

Class.	Strength.	Total Admissions.	Total Deaths.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Per cent. of Deaths to Admissions.
Teetotallers . . .	450	589	5	130·88	1·11	0·84
Temperate . . .	4318	6114	100	141·59	2·31	1·63
Intemperate . . .	940	2024	42	214·86	4·45	2·07

The influence of intemperance on sickness and mortality is shown here in a forcible manner.

Art. 3.—*The influence of Occupation upon Mortality.* By (1) the Registrar-General, and (2) Dr. Letheby.

1. (*Fourteenth Annual Report of the Registrar-General.*)
2. (*Association Journal*, Oct. 25, 1856.)

(1) The different mortality in the twelve occupations mentioned below, in the decennial period, ranging from the age of 45 to 55, is very remarkable. It is thus stated:

1. *Farmers.*—Of the twelve classes under consideration, farmers are the longest livers, their rate of mortality being not quite 12 in a 1000 (11·99). The number of English farmers of all ages in 1851, including 2429 graziers, was 225,747, of whom there were 53,608 between the age of 45 and 55. In that year the total number of deaths among farmers of all ages was 6426, very much below the numbers which would have been registered had these individuals been engaged in other pursuits. These facts prove that the pure air, the daily exercise, the substantial fare, and the other aids to health enjoyed by this substantial class, considerably modify the influence of unfavorable weather, bad seasons, open ports, peculiar burdens on land, and all the other ruinous things which farmers' friends have been accustomed to depict in such gloomy colours.

2. *Shoemakers* hold the next place to farmers, their rate of mortality between 45 and 55 being 15·03 in 1000. They are followed by—

3. *Weavers* . . . . . 15·37 in 1000
4. *Grocers* . . . . . 15·79 „
5. *Blacksmiths* . . . . 16·51 „
6. *Carpenters* . . . . 16·67 „
7. *Tailors* . . . . . 16·74 „
8. *Labourers* . . . . 17·30 „

As will be seen on inspection, there is among these seven occupations a gradual increase in the rate of mortality, which, considering

their great diversity, is quite remarkable. The near approach of these occupations to each other in the scale of mortality arises from the circumstance that they have peculiar dangers which tend to counterbalance each other. Thus it is to be noticed, that "the tailor is not exposed to the explosions which are fatal to the miner, and the labourer has exercise which is denied to the tailor."

Ascending this scale of danger, we pass to—

9.	*Miners*	20·15 in 1000
10.	*Bakers*	21·21 ,,
11.	*Butchers*	23·10 ,,
12.	*Innkeepers*	28·34 ,,

A great disparity is observable in passing from labourers into the class of miners, telling a tale of dangers, many of which result from criminal neglect. Between labourers and the last four classes in this table there is a most remarkable hiatus. In the classes previously noticed, the difference in no case is more than one in a thousand, and in some instances less. Here the difference begins with three, and mounts up to nine, in a thousand.

The returns show that the highest rates of mortality are found among the butcher (23·10 in 1000), and the class of innkeepers and licensed victuallers (28·34 in 1000).

The extraordinary mortality of butchers is a fact for which we are indebted wholly to the last census. The "red-injected face" of the butcher has produced a wrong idea as to the healthy nature of his occupation. This idea is now corrected by scientific induction, and proper sanitary means will overcome the evil thus brought to light. To quote the significant remarks in the report conveying this fact, here is an important problem for solution: "On what does the great mortality of the butcher depend? On his diet, into which too much animal food, and too little fruit and vegetables enter? on his drinking to excess? on his exposure to heat and cold? or, which is probably the most powerful cause, on the elements of decaying matter by which he is surrounded in his slaughter-house and its vicinity?"

If the rate of mortality among innkeepers, licensed victuallers, and beershop-keepers should be seized with avidity by the advocates of teetotalism, they must not be forbidden its use; at the same time they must be reminded, that "many highly respectable men of this class lead regular lives, and are of steady habits; but others, exposed by their business to unusual temptations, live intemperately and enjoy less quiet at night than the rest of the community. They are exposed also to zymotic diseases, by intercourse with large numbers of people."

(2) The influence of trade and occupation upon mortality, as exemplified in the City of London, is further seen in the following extract from Dr. Letheby's first report of the sanitary condition of the City of London:

The results of this investigation must be looked upon only as approximations to the general truth, and as evidence of what is yet to be done in this department of State medicine.

The expectancy of life among young men, generally, at 20 years is up to 60. That is nearly the expectancy in London with shopkeepers and domestic servants; for the mean age at which they die is 58·8 and 58·6. Butchers, poulterers, and fishmongers, live to the age of 53·8. Clerks, accountants, and messengers, reach to the age of from 52 to 52·3. The same is about the mean age of blacksmiths, gasfitters, and the workers in the coarse metals generally, while publicans, wine-merchants, waiters, tailors, labourers, and shoemakers, live to the age of from 49·9 to 50·3. Cabmen, and ostlers, and draymen, live only to 49·4, and soldiers, sailors, and policemen, reach only to 48 years. A like difference exists in the longevity of women, for, while the wife of the shopkeepeer will live to be about 57 years of age, and the domestic servant to 51·5, the wife of the publican and beershop-keeper, and the wife of the cabman and ostler will only reach to 44·2 and 48 years of age; and the needlewoman sinks into the grave at 42·6 years of age.

These facts show that the influences which are at work in shortening the duration of life are not merely general, but that they are affected by the habits of the people. Where there are bad food, close confinement, filthy dwellings, and improvident or vicious habits, there the lifetime is short; but where the conditions are of an opposite character, as in the case of servants and shopkeepers, it is nearly as long as it is in England generally. This is further borne out by the per centage causes of death, for consumption and fever are most fatal with shoemakers, cabmen, labourers, and needlewomen; and, though a large mortality from fever occurs amongst domestic servants and nurses, yet this is easily explained by considering the infectious character of the disease, and the circumstances under which the subjects of it are placed.

That home influences alone have much to do with the shortening of life is evident from the fact that the wives of the several classes are correspondingly shortlived. In the case of the labourer there is an apparent exception, for the longevity of the wife is greater than that of the shopkeeper; but this is explained by the fact that the labourer's wife is generally unprovided for at the death of her husband, and she seeks an asylum in the workhouse, where she reaches to a good old age; in fact, about 30 per cent. of the deaths among the wives of labourers occurred in the workhouse.

During the past year, the total number of deaths in the workhouses was 456, of which 231 were males, and 225 females. Of these, 52 belonged to the labouring class, 41 to the porter, 10 to the clerk, 23 to the tailor, 17 to the metal-worker, 13 to the publican, 34 to the shoemaker, 15 to the soldier, 23 to the carpenter, 15 to the cabman, 29 to the shopkeeper, 6 to the butcher, 39 to the domestic, and the rest are not specified. In all about 15 per cent. of the deaths occur in the workhouse.

Art. 4.—*Fœcal Fermentation as a cause of disease.* By Dr. Routh.

(*Lancet*, June, 1856.)

In this paper, which was read before the Medical Society of London, on the 17th of March, 1856, the author first referred to the conditions insisted upon in a former paper as favorable to emanation—*i. e.*, evaporation of morbid miasmata: 1st. A certain amount of temperature, and a light state of atmosphere. 2d. Moisture in the air. 3d. The existence of ammonia always present in contagious diseases, and in the decomposition of organic matter. Whereas the opposite state, a low temperature, and heavy state of atmosphere, and dryness favour the deposition of such miasmata to the surface of the earth, and their solution in water. From such data, when known, we could almost always argue *à posteriori*, as to whether the poison were imbibed in water or respired in air. At very low temperatures, 0° Fah., and even some degrees above that, he believed emanation was impossible. Vapour at 0° Fah. contained only 0·856 of moisture; at 95° Fah., 17·009. Even at 11° Fah., it was nearly 0; at 50° Fah., 2·5. In reference to this point, Dr. Routh alluded to the views of Dr. Barton, of America, on yellow fever, as confirmed by Dr. Hunt, of Buffalo, who had shown that yellow fever never occurred except when heat and moisture concurred with what they called terrene causes—*i. e.*, upheaval of soil and decomposing organic matters. Dr. Routh then spoke of the nature of some of these miasmata, some which were like perfumes, detectible by their effects on the body, but not chemically; others, like carburetted hydrogen, sulphuretted hydrogen, and phosphuretted hydrogen, were discoverable as such, and no doubt concurred in the production of symptoms. These emanations required a certain amount of heat for their development—according to Chisholm, from 60° to 90° Fah., above or below which they were destroyed. But in many cases something more was needed, and it was a favorable electrical state of the atmosphere. It was known that the electric effects varied with the degree of moisture in the air; and, sometimes, as in typhus, the mucous membranes give positive electricity, and the skin negative, which was the reverse of what was observed in health. Dr. Routh then proceeded to consider the injurious influences of fæcal emanations, in proof of which he quoted the evidence of Drs. Sutherland, Grainger, and Lewis. In the case of the Christchurch Workhouse, Spitalfields, where the emanations of a manure-manufactory, especially when the wind blew from the manufactory towards the workhouse, gave rise to typhus and typhoid fever, and gave a malignant character to measles, smallpox, &c. The same thing was observed in St. George's, Southwark, in the summer of 1847, where, from a similar cause, intractable diarrhœa resulted. The mortality in places exposed to the effluvia of night-soil, as in the potteries of Kensington, the Witham suburb of Hull, was always very much greater than in other ordinary localities. The author then alluded to the objection which had been raised about the healthiness of Montfaucon, near Paris, and its neighbourhood.

Statistics in reference to the relative sanitary condition of this locality, as compared with others in Paris, were, however, wanting; but it was a known fact that, when the wind blew from that quarter towards the Hôpital St. Louis, puerperal fever was generated in the lying-in wards. If the workmen of Montfaucon themselves escaped typhus, it was due rather to the strong animal food they indulged in, as compared to other workmen of Paris, than to their occupation. Debility and bad food had been shown, both by Drs. Alison and Corrigan, to make persons very obnoxious to typhus.

If the views above enunciated were correct, the remedies called for were such as would check fermentation. These were, alkalies, mineral acids, concentrated vegetable acids, volatile oils, alcohol, sea-salt, the metallic salts, especially mercury, sulphurous acid, arsenious acid, chlorine, creosote, &c., and charcoal. A lesson might, moreover, be learnt in regard to treatment in these cases, from the processes employed for deodorizing manure. One way was, by collecting the slime and mud of large rivers, which being burnt, owing to the organic matter contained in it, yielded charcoal in very minute divisions. Peat cinders (the refuse of carbonized peat), the bran of sawed wood, and some kinds of mould, had a similar effect. Hydrochloric acid, the tribasic phosphate of soda, and the mother-liquor of salt-works, were equally good disinfectants. Amongst this list one could not fail to be struck in recognising those remedies which have been found most efficacious in the treatment of many of the diseases before referred to. Thus, in cholera, sulphuric acid, charcoal, saline injections, common salt, and mercury; in diarrhœa, creosote; in dysentery, sulphate of copper, alum, and charcoal; intermittent fever, charcoal and arsenic; typhus, mercury, effervescents, &c. There could be no doubt that for every disease generated by fermentation there was a peculiar antiseptic most fitted for selection: thus arsenic might be the best for skin diseases, because it acted chiefly on the gelatinous tissues; so there was probably one most applicable to diseases of the mucous membrane, glands, &c., but few of these were known certainly. These remedies, however, only applied to the individual; something more was required for the sanitary condition of communities. Two of these general remedies had been lately much spoken about—viz., charcoal and sea-water. *Charcoal* had been alluded to before as an antiseptic. From Dr. Stenhouse's inquiries, however, it appeared to be also a destroyer of ferments, as well as a deodorizer, the first property being due to the large quantity of oxygen contained in its pores, which burnt, as it were, the decaying matter. Dr. Routh then alluded to the series of papers on this subject, published in the 'London Journal of Health,' by Dr. Richardson. Charcoal filters applied over our gully-holes and water-closets might, in great measure, destroy the bad odours; still all the gully-holes could not be closed, as mud and rain must descend into the sewers; hence it was imperative to deodorize the sewers themselves. The price of hydrochloric acid, chloride of lime, and ordinary charcoal, rendered the chance of their general employment quite improbable: but charcoal prepared according to Mr. Salmon's method, by the combustion of the Thames soil, would suffice for all purposes.

All that would be necessary would be, its admixture with the water by which the sewers were ordinarily flushed, which could be done by forcible agitation of the water and charcoal prior to its diffusion.—*Sea-water:* As a supply of water had been of late recommended by Mr. Fuller, Dr. Routh was fearful, from what he had observed at the sea side, and in marine as compared with fresh-water vivaria, as also from some experiments made, that organic matters would putrefy much more readily in sea-water than in fresh. If sea-water therefore were used, it must also be mixed with charcoal; and this might readily be done with the foul Serpentine or Thames water, which would be thereby completely deodorized and purified, and this would be effected at much less expense. If the matter of sewers were in this manner collected at some distant point, we should obtain, moreover, an excellent deodorized manure, and our London streets and river would be comparatively sweet and pure, and as a result disease would be less frequent and fatal.

Art. 5.—*Revival of Urn-burial.*

By the Editor of the 'Edinburgh Medical Journal.'

(*Edinburgh Medical Journal*, Nov., 1856.)

"A curious discussion has been raised by the Académie de Médecine of Paris, on the mode of disposing of the dead. Several of the leading Paris journals, particularly the 'Presse' and the 'Siècle,' defend with great boldness the assertion of the Académie, that the vicinity of Père-la-Chaise and the cemetery of Montmartre is gradually introducing new diseases amongst the working classes; and that in summer time the hospitals are crowded with the victims of pestilence engendered by the foul air of the graveyards in the neighbourhoods of Paris. The discussion is likely to lead to some result and to become a party question; for a new journal, to be devoted entirely to this one subject, has just appeared. This journal, called 'La Crémation,' is edited by two of the first writers of the 'Presse,' and is supposed to be quite in accordance with the sentiments of the Government. M. Alexandre Bonneau proposes to replace all cemeteries adjoining to all great cities by an edifice to be denominated a 'sarcophagus.' This edifice to occupy the highest spot of ground in the city, 'where the corpses of both rich and poor should be conveyed, there to be laid out on a metallic tablet, which, sliding by an instantaneous movement into a concealed furnace, would cause the whole body to be consumed in the space of a few minutes.' With true French instinct, M. Bonneau proceeds to urge not only the utility to the public, but also the interests of art in this new method of disposing of the dead, for he points out with great complacency the new element of prosperity to the artists existing in the furnishing of funeral urns, which he declares would soon open a new source of expense and luxury to the rich. 'For who would not love to preserve the ashes of his ancestor? The funeral urn would soon be found to replace on our consoles and mantelpieces, the present ornaments of bronze clock and china vases now found there.' All this may seem a misplaced pleasantry to English

minds; but in Paris these things find serious men to write and fight in their defence; and we cannot help feeling rather startled on reading the sanitary report which first led to the discussion. 'The vicinity of the cemeteries is a constant source of mortality. No matter from what quarter the wind blows, it must bring over Paris the putrid emanations of Père-la-Chaise, of Montmartre, or Montparnasse; and the very water which we drink, being impregnated with the same poisonous matter, we become the prey of new and frightful diseases of the throat and lungs, to which thousands of both sexes fall victims in the spring and autumn of every year. Thus the *angine couenneuse*, which baffles the skill of all our most experienced medical men, and which carries off its victims in a few hours, is traced to the absorption of the vitiated air into the windpipe, and has been observed to rage with the greatest violence in those quarters situate on the outskirts of the town, and, consequently, the nearest to the cemeteries.'

"The latter argument has created many converts to the opinions of M. Alexandre Bonneau; and the first number of 'La Crémation' has excited much interest. After a long interval of desuetude, Sir Thomas Browne's 'Urn-burial' may come to be consulted as a work for practical details—and the urns in our museums, instead of representing obsolete utensils, may become models for those vases which present such charms for M. Bonneau. Perhaps, however, the vase theory is a step too far in advance, and the Parisians, if they see their way to consumption by fire, may prefer burying the ashes of their friends in the earth, as was done with the remains of Shelley's burned body, rather than that the dust of humanity, however rich the enclosing caskets, should be chimney ornaments in drawing rooms.

"The utilitarian character of the English, as distinguished from the more fanciful temperament of the French, is exemplified in the mode of interment adopted in the case of the late Sir William Temple, as detailed in the 'Times' some days ago. The body was interred in a bed of charcoal, whilst the gases from the coffin are conducted by a pipe to the outside of the church. The leading journal speaks in high terms of the conserving influence thus exercised on the lungs of worshippers; but we are not so sanguine as to the benefits of the system. It may do in rare instances of intra-mural burial, but if universally adopted, congregations would be saved at the expense of the general public. Cremation is a process to which the British mind will not soon be reconciled, and the only graveyard reform presently within reach is distant cemeteries and deep sepulture amongst charcoal or other deodorizing substances."

Art. 6.—*On the defects of Hospitals in respect of Ventilation, &c.* By Mr. Roberton.

(Reprinted from the *Transactions of the Manchester Statistical Society.*)

The principal object of this paper is to draw attention to the necessity of constructing hospitals in such a way that the air of one ward will not mix with and pollute the air of another ward. The hospital at Bordeaux (of which a plan is given), in which the wards are in

reality detached buildings arranged around a large quadrangle, and separated by gardens, and into which the air can freely enter and pass out again through oppositely-placed windows, which reach from the floor to the top of the ceiling, is pointed out, and very properly pointed out, as a model of what a hospital should be. Indeed, the paper contains many excellent remarks which deserve to be studied by those who are concerned in the formation of buildings for the reception of the sick and wounded.

ART. 7.—*Poisonous effects of the Vapour of Sulphuret of Carbon in Caoutchouc manufactories.* By M. DELPECH.

(*L'Union Médicale*, May 31, 1856; and *Assoc. d.*, Sept. 20, 1856.)

The symptoms produced by this vapour upon the workmen exposed to it are developed in different degrees. They are thus arranged by M. Delpech.

"1. *Disturbance of the intellectual functions.*—Impairment of memory is the most common and most marked of the symptoms of this class. The workmen forget what they have to do, and make great mistakes, to the injury of the manufacture. Every moment they search for the tools which they have just laid aside; they are vague in their ideas, and cannot keep their attention fixed on any one subject. Two patients, observed by M. Delpech, could not find words to express their ideas. Some became violent and irritable, being angered at the least cause, striking all who came in their way, and breaking objects near them. Want of sleep, restlessness, fatiguing dreams, and awakening with starts, were observed in almost all M. Delpech's cases: during the day, these patients were depressed, and without energy; and, whether from want of sleep, or more probably, from the influence of the sulphurous vapours, they felt a strong propensity to sleep.

"2. *General sensation* is not very severely affected; however, there is almost always some heaviness of the head, more or less severe headache, sometimes very intense, and extreme vertigo. The pain, it has been observed by M. Bouchardat, occupies the top of the head, and is sometimes transient, lasting only two or three hours, sometimes obstinately persistent. In several cases, there have been observed pains in the limbs like chronic rheumatism, and general creeping and pricking sensations. M. Delpech has never observed well-marked anæsthesia: but M. Bouchardat has noticed slight loss of sensibility in the arms and hands. In one of M. Delpech's cases there was complete insensibility to pain—common tactile sensibility remaining; in another, there was marked hyperæsthesia.

"3. *Special senses.*—Though no structural lesion could be discovered in the eye, the sight was, in M. Delpech's cases, greatly weakened. The pupils were mobile, but generally dilated; a thick cloud seemed spread between the patients and the objects at which they looked. Hearing was temporarily affected in several. The food of the patients, their tobacco, and all odorous subjects, appeared to them impregnated with the fumes of sulphuret of carbon.

"4. *Generative functions.*—In nearly all the cases, the sexual appetite was lost. Coition was almost impossible. As the patients were young healthy men, this fact is more remarkable: and perhaps this impairment of the sexual function is one of the most marked symptoms of poisoning by sulphuret of carbon. The same effect has been observed in females.

"5. *Motion.*—One patient had frequent painful cramps of the limbs; another had involuntary contractions of the upper eyelid; and another had a kind of transient contraction of the flexor muscles of the fingers. M. Bouchardat and M. Delpech have observed a stiffness of the fingers, and of the upper limbs in general. In all the patients, muscular weakness was strongly marked, both in the lower and the upper limbs. There was in all the patients a degree of hesitation in their movements approaching to general tremor; but it appears to have reached a high degree in one case only. The muscular debility was accompanied by marked atrophy. In one case, the arms were so reduced that there was a depression in the interosseous space of the forearm; and the muscles of the thenar eminence were greatly reduced. The power of contraction under electricity remained in the muscles of all the patients who were submitted to this test.

"6. *Digestive organs.*—The symptoms have generally begun by slight disturbances of the digestive functions. Loss of appetite has been constant, and has reached so high a degree as to amount to disgust for all food, from the idea that it tasted of sulphur. The appetite reappeared in several when they had passed some hours in the air. Another symptom has been constant nausea, not always, but generally, amounting to vomiting. The vomiting returned at various times; sometimes during work, when the ejected matters were greenish and bilious; sometimes after breakfast, when the food was rejected. The vomiting was generally accompanied by extreme *malaise* and cold sweats, and left the patients much exhausted. Salivation, properly so called, was not observed; but several had their mouths frequently full of saliva. Colic was an habitual symptom, occasionally very severe: it was not regularly accompanied by either diarrhœa or constipation. The fæcal matters very often smelt strongly of sulphuret of carbon: some of the patients complained much of flatulence.

"7. *Respiration.*—The breath generally smells of sulphur. There is generally some breathlessness after walking; the respiration is short; but M. Delpech has only twice discovered any abnormal physical signs.

"8. *Circulation.*—The heart seemed healthy in all the patients. Several felt palpitation at various periods. In the cachectic patients, *bruits de souffle* were heard in the vessels of the neck. No constant febrile phenomena have been observed. In some there have been sudden rigors, with acceleration of the pulse, especially during the night.

"9. *Secretions.*—The urine in these cases has not been sufficiently examined; but in some it has been at times coloured brown by alkalies, and at other times has contained a large amount of sulphates and carbonates. Several of the patients have felt pain during micturition—due, if their observation of the odour of the urine be correct, to the presence of sulphur. M. Delpech has observed an odour of sulphuret

of carbon in the urine kept for his examination. The slight irritation of the urethral mucous membrane may be also explained by the presence of salts in abundance.

"10. *Cachexia.*—The patients fall into a more or less marked state of cachexia; they are pale, their skin is pasty, their mucous membranes lose colour, and anæmic murmurs can be heard. Most frequently, this cachexia is complicated by the complete or partial persistence of the symptoms of which it is the sequel. General weakness, loss of sexual power, and a sensation of vagueness in the mind, are the most usual concomitant phenomena."

Art. 8.—*On Arsenic-eating.* By Mr. W. B. Kesteven.

(*Assoc. Journal*, Sept. 20, 1856.)

The following is a summary of the information respecting arsenic-eating, which is elicited in these very interesting papers:

1. The evidence upon which the statements have been made, is simply the loosest kind of second-hand hearsay evidence. Neither Dr. Von Tschudi, Mr. Boner, Dr. Johnston, Dr. Kaltenbrenner, nor Dr. Vitzhum, have personally observed or watched the arsenic-eater, although the two latter are resident in parts of Styria where it is alleged that arsenic-eating prevails. All these gentlemen have received their information from other persons.

2. No chemical examinations of the excretions of those alleged to be taking arsenic have been made; neither has any necroscopic examination or chemical analysis been made of the bodies or organs of those who have died after having indulged in arsenic-eating.

3. No analysis of the substance said to be eaten as arsenic has been attempted, in order to ascertain that primary essential point.

4. The alleged tonic and stimulant effects of arsenic taken in the manner reported, are totally at variance with all other experience of the action of this poison; while the consequences which, it is pretended, follow on the discontinuance of the habit of arsenic-eating, are consistent only with those witnessed in all other parts of the world as the result of the long-continued and persistent administration of this substance, and these disappearing on the withdrawal of the drug, in all other instances except those of the pretended Styrian arsenic-eater.

5. No mention has been made of the effects of arsenic upon the systems of those unaccustomed to its action—the beginners in the practice; and surely no one would be so bold as to assert that the Styrian peasant can do what no other human being can do; that is, swallow a grain or two of arsenic, for the first time, without experiencing consequences of any kind. There is, moreover, a total want of any statistical information as to how many are killed off in the process of becoming accustomed to the effects of the poison—a fact which of itself throws the gravest doubts upon the story, since even a very slight inquiry inevitably must have revealed a certain mortality from this cause, more surely than from the alleged occasional excess, or want of the poison.

6. No information has been tendered as to how long this alleged practice may have existed. It is quite certain that it could not have suddenly sprung up without having attracted the attention of resident medical practitioners: since some of those who have been reported as indulging so depraved an appetite, are said to have so done for periods of twenty or thirty years. Dr. Von Tschudi reports, that one man had followed the practice for forty years, and had derived it from his father. As these persons must have learnt the practice from others, when did the indulgence originate? and how is it that it has only lately come to light, and that merely through the passing curiosity of a traveller? Strange, if true.

7. In the districts of Cornwall where arsenic is largely prepared, no such practice as arsenic-eating has ever been known. Supposing the truth of the statements respecting the Styrian peasantry, the same might fairly have been expected of the Cornish peasantry; the absence of the practice, therefore, in the latter case, augments the incredibility of the former. On the other hand, it must be noticed that the destruction to the lower animals and to vegetation, together with the symptoms of chronic poison by its inhalation, and of chronic skin-disease by its external irritation, observed in the mining districts of Cornwall, has been altogether overlooked by the searchers for marvellous stories among the arsenic-works in Styria, where this deadly poison is said to bestow health, vigour, and beauty.

How different is the gloomy picture of these cases of chronic poisoning from the glowing colours in which this fearful agent is dressed up to charm the innocent and the ignorant, in the pages of Dr. Johnston's romance. How great a discrepancy is here seen—a discrepancy fatal to the credibility of the entire tale, with those who will take the pains to reflect thereon So dominant, however, in most minds, is the love of the marvellous, that, no matter how improbable, the tale is taken up and repeated until, by frequent repetition, it gains so firm a hold upon public credence, that to doubt is to be guilty of heretical scepticism.

So indisposed, or so incapable, to investigate any scientific matter are too many, that they will readily save themselves that trouble by indulging their credulity.

It has been stated in the outset, that the medico-legal importance of this question induced the writer to investigate its grounds. It has been shown, now that the story wants verification, that so far as information has been procurable, up to the present time, the assertion of the practice of arsenic-eating is totally destitute of all the elements of proof which are invariably demanded, and have always been produced, before statements assuming a scientific character can be received as trustworthy, or regarded as facts.

To urge, therefore, as probable, such a fabulous explanation of the presence of arsenic in a human body, is mere idle talk, and an affront to the common sense of a jury—a mere trick unworthy a highminded advocate. If, however, the plea should be put forth, it will, as in the late Burdon slow poisoning case, be blown to the winds, as utterly untenable and irrelevant to the question before the court. It is hoped, moreover, that medical witnesses will not again admit infer-

ences from such unsupported statements, as having the same weight and value as those drawn from indisputable fact.

Not only was it desirable on medico-legal grounds to show the fabulous character of this story, but it is also of the last importance thereby to warn those who are not competent to detect the fallacious and superficial nature of its evidence, that they must not dare to tamper with so virulent a poison, under a belief that it may be taken with impunity. Notwithstanding all that has been written about its power to bestow a healthy hue, and to heighten the charms of beauty, it still remains a potent poison;—as they may too late discover, if they suffer themselves to be led away by the specious misrepresentations of the lovers of the marvellous.

The conclusion drawn is, that the story of the Styrian arsenic-eaters is not only unsupported by adequate testimony, but is inconsistent, improbable, and utterly incredible.

Art. 9.—*On the influence of Artificial Heat upon the Atmosphere of London.* By Dr. Chowne.

(*Medical Times and Gazette*, Oct. 18, 1856.)

The following particulars are extracted from a paper which was read by Dr. Chowne, on the opening of the present session of the Medical Society of London:

"The well-known effect of clouds, in reflecting back the heat radiated to them from the earth and terrestrial objects, induced me to make some experiments on the subject. These experiments were made in the winter months, when the agents for producing artificial heat are in general operation. It might be easily imagined, that the vast amount of heat generated in the metropolis, and in all large manufacturing towns, by the use of furnaces, by domestic fires, by gas-lights, &c., must exercise considerable effect on the temperature of the atmosphere of these localities. During the year 1850, in order to ascertain the temperature of the London atmosphere on fine clear nights, when compared with that of moderately cloudy nights, as well as on intensely dark and clouded nights, when radiation would be most obstructed, a cylinder of three inches in diameter, and twelve inches long, was inserted vertically in the earth, and a thermometer was placed within it. The upper orifice of the cylinder, being just level with the ground, was covered by a piece of zinc plate, merely laid upon it; the lower extremity of the cylinder was closed by a disc of the same metal, and soldered. At the same time another thermometer was suspended, nearly over the cylinder, at the height of about ten inches from the ground, and in the free air. The state of the sky was carefully examined during all the experiments. The same general fluctuations of temperature occurred, as have been observed within certain limits, by Mr. Wilson, Mr. Six, Dr. Wells, Melloni, and others; but on intensely cloudy nights, the quantity of heat reflected back by the clouds was sufficient to raise the temperature of the exposed thermometer to a higher degree than that indicated by the thermometer in the cylinder, and partaking directly of

the earth's warmth. The experiments were made in one of the gardens at the back of Connaught Place West, Hyde Park. Thus it is satisfactorily proved that on the moderately cloudy nights, when compared with those of the three fine nights (namely, the 27th, 28th, and 29th of November), the thermometers indicated the presence of reflected heat in a degree not differing from what might have occurred in the open country; but that on the densely clouded nights, they indicated a degree of heat sensibly above what they could have derived from the earth's surface. Other thermometers were suspended at the same time in pairs; one of each pair was placed in a situation where it was more or less sheltered from the sky; the other was placed about two feet from it, and at the same height from the ground, but fully exposed to the sky. The result was that, on the intensely dark and cloudy nights, the temperature of the exposed thermometers attained a higher degree than that attained by those that were sheltered. This occurred on the nights when it was found that the exposed thermometer already spoken of as being suspended near the ground, attained a higher temperature than that in the cylinder within the ground. Hence, although in ordinary circumstances the air under a shed is, during the night, warmer than the unsheltered air, yet on extremely overcast nights, the relative temperatures are reversed, and are rendered analogous to those which exist on sunny days, when thermometers exposed to the sun's rays indicate a higher temperature than those sheltered from them. Dr. Wells, when he had changed the place of his experiments on dew from the open country to Lincoln's Inn Fields, considered that the surrounding houses had an influence on his thermometers. He says, 'in situations where large masses of bare solid matter exist, . . . a greater heat will be received by the exposed body' than what is radiated by itself. For example, it seemed certain to me that the houses surrounding Lincoln's Inn Fields had an influence upon my thermometers during my experiments there at night, beyond what arose from their merely returning a quantity of heat, equivalent to that which they received from the surface of the garden.' It does not appear that Dr. Wells attributed the various effects produced on his thermometers to any influence of artificial heat translated by processes of combustion from the earth to the clouds, and reflected by them back again; indeed, at the time when his experiments were made, two great sources of heat now in operation, the making and the burning of gas, had but a very limited existence. It may likewise be remarked that the consumption of gas for lights had added almost incalculably to the quantity of heat communicated to the open air. The experiments were repeated on nights more or less foggy, and the results were in accordance with what had been observed by the authorities already mentioned, namely, that fog does not exercise the same power as clouds in reflecting back the heat emitted by radiation or otherwise from the earth." Dr. Chowne then dwelt on the important inference which appeared to be deducible from the fact that so large a body of artificial heat can be thrown back upon terrestrial objects, a probable consequence being to augment the atmospheric capacity for holding aqueous vapours; and this circumstance renders the subject one of interest in regard to the

atmosphere, not only in its physical relations generally, but also in its relations to our sewers, and the openings from them at the gratings in the streets. Although in a room where gas is burning the hygrometer (Mason's) indicates a decrease of the difference of temperature between the dry bulb and the wet one, owing to the quantity of vapour generated by the process of combustion, yet the fact of such formation in the open air would but slightly interfere with the aggregate results of combustion going on by other means at the same time. The quantity of aqueous vapour supplied by the surface evaporation from the streets of London, except when they are wet with rain, or from other causes, is extremely small; and the same might be said of that from the surface of the Thames, when compared with the vast extent of the metropolis. The Thames, moreover, is remote from the great mass of the populous districts. On calm, still nights, when there is scarcely wind enough to move our atmosphere along; and when, moreover, there is the absence of rain, any increase of temperature, such as the experiments described show to take place, must have a powerful influence, not only on all the pneumatic relations existing between the open atmosphere and the atmospheres of dwelling houses and of sewers, but also on the chemical relations affecting all dead and decomposing organized matters. This led the author to a consideration of the emanations from sewers under the atmospheric conditions just noticed, and which lead us to the general question of means and ends connected with sanitary improvements. Meteorological and physical phenomena in the grand operations of nature we cannot control, whether they effect us for good or for ill; but what belongs to the class of artificial operations might hereafter find a remedy; there is, however, very much to be changed before that can be brought about. The author then referred successively to openings in the streets as not fit places of escape for subterranean exhalations; the transmission of the atmosphere of the sewers by means of the house-drains into our houses. With regard to the temperature of the sewers, the author had no opportunity of ascertaining the state of the case. On the intensely cloudy nights to which the experiments detailed in this paper refer, the inference, however, would be, that a strong analogy would be found in the results to the fact already recorded. The circumstances under which currents of air take place, and the direction of their movements, next came under consideration, and the author proceeded to detail investigations carried on in respect to the direction of currents from gully-holes; but in respect to the data obtained, remarked that the results could not be fully explained without a better knowledge as to the pneumatic influences which particular parts of the sewers are under at the time of making the trial. With regard to dwelling houses, the author had ascertained, in very many instances, that great quantities of foul air passed from the sewers to their interiors, steadily and constantly contaminating the atmosphere of the house, although generally the admitted effluvia, owing to its being diluted by the atmosphere of the house, does not betray its presence by a strong odour. Dr. Chowne concluded by remarking that the bearing of these experiments was to show that the condition of the atmosphere, produced by the various sources of artificial heat

referred to, could not fail to have a powerful influence, not only on the sanitary state of the metropolis, but also of all large manufacturing towns.

(B) ACUTE DISEASES.

ART. 10.—*On the treatment of Typhus and Typhoid Fever.* By Professor DIETL, of Cracow.

(*Wien. Wochenschrift*, 44, 50, 1856.)

In this paper Dr. Dietl advocates a nourishing and tonic plan of treatment in fevers. Pure air and good nourishment (not mere slops) are, in his opinion, of far greater importance than pharmaceutical remedies; but at the same time a free use of acids, especially the phosphoric, and of quinine in large doses, is believed to be of the greatest utility. Dr. Dietl even objects to cold applications to the head, on the ground that the head symptoms in fever are the result, not of simple cerebral congestion, but of a dyscrasia, which does not require and will not bear any depressing agencies whatever. The sentiments and practice of Dr. Dietl are, indeed, very similar to the sentiments and practice of Dr. Stokes, and others of the same school.

ART. 11.—*On Typhus in the Crimea.* By M. BAUDENS, Surgeon-in-Chief of the French Army.

(*American Quarterly Journal of Med. Science*, Oct., 1856.)

M. Baudens has lately addressed a letter from Constantinople to the President of the Parisian Academy of Medicine, in which he states that the typhus which reigned amongst the French troops is not identical with typhoid fever, notwithstanding a certain amount of analogy as to cause, periods, and sequelæ.

Typhus, as lately observed in the Crimea, is engendered by want, and crowding, either in prisons, hospitals, or on board vessels; the disease may, indeed, be called forth and removed at will. This is not the case with typhoid fever and other epidemics, as cholera, which, in spite of all precautions, break out suddenly and disappear without any appreciable cause. Typhus is propagated both by infection and contagion; the latter mode of transmission, which is doubted by some as to typhoid fever, is quite evident as to the Crimean typhus.

The difference between typhus and the generality of epidemics is, that the latter reign only temporarily, according to the duration of certain atmospheric influences, whilst typhus continues until the causes of infection have been removed. The Crimean typhus has presented less regularity and uniformity in the accession of symptoms than the ordinary typhus described by Hildenbrand. This irregularity may be ascribed to various causes, amongst which should especially be noted scurvy, dysentery, and the intermittents, which were excited by the marshes of the valley of the Tchernaya. There were mostly

no premonitory symptoms, as lassitude, sleeplessness, lumbar pains, horripilatio, tension in the head, and vertigo, so common in typhoid fever. The Crimean typhus began at once by shivering, frontal cephalalgia, stupor, muttering or violent delirium, total prostration, more or less discharge from the eyes, the nares, or bronchi, intense thirst, and a foul state of the alimentary canal. The burning skin was covered in two or three days with an exanthematous eruption, different from that which is seen in typhoid fever, and presenting irregular groups of round spots of a dull red, smaller than a split pea, and not disappearing upon pressure with the finger. There were generally neither petechia nor sudamina. The fever proved continuous, with from 100 to 130 beats in a minute, but was interrupted by one, or sometimes two, regular paroxysms in the twenty-four hours, somewhat similar to fits of ague, which circumstance has given the Crimean fever a peculiar character. The abdomen was generally soft, painless, and without either tympanitis or that gurgling in the iliac fossa peculiar to typhoid fever. Instead of the diarrhœa which generally accompanies the latter affection, constipation was present in the Crimean fever, except in those cases where dysentery existed before the attack. The inflammatory period lasted five or six days, and was followed by cerebral symptoms of the ataxic and adynamic character. The latter lasted only four or five days, and were slight in the cases which recovered.

The short duration of this fever contrasts strikingly with the length of time during which typhoid fever generally lasts. Death has often occurred on the third day, sometimes on the second, and even on the first. The latter were fearful cases. The fever continued rarely beyond the twelfth or fifteenth day, save when complications occurred, such as congestion of the viscera of any of the three splanchnic cavities. Convalescence almost always took place within the first ten days, the patient passing at once, as it were, from death to life. Coma and delirium left him as by magic, but sleep continued heavy, and there remained deafness, weakness of sight, and some loss of memory. No falling of hair, as happens after typhoid fever, was noticed. The favorable changes were often preceded by epistaxis, diaphoresis, critical urine, and sometimes mumps. Convalescence, which advances so slowly in typhoid fever, is rapid in typhus, and errors of diet have no unpleasant results. This is owing to the absence of inflammation of the intestinal follicles, and the non-congestive state of the mesenteric glands, the reverse being one of the principal characteristics of typhoid fever.

The liver and the spleen, in the Crimean typhus, were often found gorged with blood, and softened; the lungs, when congested, were either clogged or hepatized; the meninges injected; opaline effusion in the arachnoid, sometimes with pseudo-membranous patches; cerebral surface dotted, softened, or presenting on its surface a layer of pus.

Art. 12.—*Influence of Season upon Cholera in India.* By Mr. Waring.

(*Indian Annals of Med. Sci.*, April, 1856.)

The connection between cholera and *drought* has been commented upon on a former occasion. The present facts are very striking:

"During the years 1851-52-53, the deaths in Bombay from cholera amounted to 6494, the proportion which died in each month or season, is exhibited in the following table:

Months.	1851.	1852.	1853.	Total.	
February . .	905	91	3	999	} 3062, or 61·8 per cent.
March . . .	1013	160	13	1186	
April	601	271	5	877	
May	373	149	16	538	} 1281, or 19·7 per cent.
June	339	151	9	499	
July	73	165	6	244	
August . . .	37	66	6	109	} 438, or 6·7 per cent.
September .	25	19	6	50	
October . . .	19	10	250	279	
November . .	20	6	571	597	} 1713, or 26·3 per cent.
December . .	207	24	240	471	
January . . .	408	23	214	645	
	4020	1135	1339	6494	

"On turning to the meteorological abstracts in the appendix for an explanation of the great mortality of the first and fourth quarters, as shown above, and the comparative exemption of the second and third quarters, we were at once struck by the fact of the two latter quarters (the second and third) constituting the regular monsoon, or rainy season, of Bombay. If, instead of taking quarters, we divide the above cases into half-years, we find the figures stand thus:

Rainy season (May to October inclusive), 1719 deaths, or 26·4 per cent.
Dry season (November to April inclusive), 4775 deaths, or 73·5 per cent.

"A careful comparison of the above figures with the meteorological abstracts, leads naturally to the conclusion that in (Bombay at least) the humidity of the air in the wet season is unfavorable to the generation and development or operation of the choleraic poison, be that what it may, and that, on the other hand, the dry season is, in some mode, yet unexplained, favorable to its generation and operation. We notice that in the six dry months in each year, the pressure of the air, as shown by the barometer, attained its maximum, and likewise that the mean range of the pressure was greatest in these months, also the

thermometer showed the widest ranges, and the humidity of the air was comparatively small. One other circumstance marks the dry from the wet season, which deserves notice, namely, *the prevalence of the land winds*, so much dreaded by most natives of Southern India, especially on the western coast. I am unable to trace the connection between them by comparing the mean number of hours the land wind prevailed and the deaths from cholera; but it is certain that the mean number of hours the land wind blew during the dry season, when cholera was most rife, is above three times greater than in the wet season, when, as we have seen, cholera is comparatively rare."

ART. 13.—*On the Cholera which visited Her Majesty's Black Sea Fleet in the autumn of* 1854. By Dr. BABINGTON.

(*Lancet*, Aug. 23, 1856.)

This report is compiled from the returns of the medical officers of the fleet to queries drawn up by the Cholera Committee of the Epidemiological Society. It was read on the 4th of August, 1856, at a meeting of this society.

Dr. Babington commenced by observing that the medical officers of the navy were, from the double examination which they had all passed through, first under the general professional authorities of the empire, and then under the authorities connected with the service, well qualified to answer inquiries, and the more so from their isolated positions and probable freedom from preconceived theories. The superior opportunities of observing disease at its onset, and of knowing the habits, occupations, diet, &c., of the ship's crew, were pointed out, as also the advantage of being able to trace all particulars regarding first cases. The great facility which a ship possessed of being able to move from place to place was particularly dwelt on; after which the writer proceeded to enumerate the ships in the Black Sea fleet—twenty-five in number—in which cholera occurred; also those—three in number—in which diarrhœa occurred; and, finally, those in which there was neither cholera nor diarrhœa. He then read the queries which the Cholera Committee had circulated to the fleet, and explained an elaborate table which he had drawn up of all those circumstances in the answers to those queries which admitted of tabulation. He next took into consideration those subjects in the queries which did not admit of tabulation, the first being the question as to whether the crews of boats communicating with the shore suffered more, and at an earlier period, than the men who were confined to the ship. A summary of the answers showed that in seven ships those persons having communication with the shore *were* first affected with the disease; and that in fourteen ships the disease did not appear first in those who were in communication with the shore: while in the remaining ships there was no evidence either one way or the other. To the question regarding the number, if any, of cases without premonitory symptoms, a summary of the answers showed that out of 711 attacked of cholera, reported in the Black Sea fleet, there were, without premonitory symptoms, 134 cases, or more than one in six. The following is a

summary of the opinions of the medical officers: first, on the chief predisposing and exciting cause of the outbreak; second, on the comparative immunity of certain of the ships; third, on the treatment of the disease; and fourth, on the best preventive measures. The question regarding predisposing causes is answered by the medical men of fifteen ships only, and their opinions are all comprised under one or other of the following heads: exposure to sudden changes of heat, cold, and moisture, and to night air; bad food and clothing; intemperance; the immoderate use of fruit and vegetables, or the use of unripe fruit or decayed vegetables; the drinking cold water when hot; over-fatigue; crowding; bad ventilation; the use of impure water; finally, diarrhœa, as a consequence of the foregoing causes, whether singly or in combination. With respect to the exciting cause, the question is answered by the medical men of sixteen ships only. Of these, ten consider it to have been atmospheric influence; one considers poison to have been atmospheric, but that it was rendered contagious by evacuations from the sick, and by foul air; while the remaining five, without mentioning the term, evidently lean to the side of contagion. The question regarding the cause of comparative immunity received answers from the medical men of sixteen ships, who attribute it to the shifting of locality; to cleanliness, dryness, and thorough ventilation; to keeping the men out of the sun, and fully occupying them; to their excellent health and regular habits, and their non-communication with the shore; to the free use of chloride of zinc; to the use of quinine wine as a preventive; to the avoidance of unripe fruit, and the early treatment of diarrhœa. On the subject of treatment, there are answers from all those ships which were visited by either cholera or diarrhœa, but there were twelve which escaped altogether. It seems to have been a very frequent practice to commence with a large dose of calomel and opium, and to proceed with small doses at frequent intervals. In at least eighteen of the ships, calomel seems to have been the leading medicine. Stimulants, both internal and external, were much used. Dr. Billing's plan, by oft-repeated small doses of tartar emetic, is extolled by one gentleman, and Dr. Stevens's saline plan by another; but no such amount of success seems to have followed any mode of treatment as to recommend it emphatically beyond the rest. The only novelty noticed is the application of numerous cupping-glasses over the limbs and body, which in one ship is said to have had a good effect in restoring warmth and preventing cramp. The suggestions offered with regard to prophylaxis admit of division into those which respect the ship and those which respect the men. As to the former, the chief recommendations are cleanlinesss, ventilation, fumigation, and whitewashing, dryness, the free use of chloride of zinc, and a shifting of locality. In one instance it is suggested that in steamships the bilges should be lined with metal, to prevent the absorption of grease, and that they should be flushed with alkaline hot water previously to purification by chloride of zinc. The preventive measure as applicable to the men are a generous diet with fresh provisions when procurable, recreation, amusement, comforts, warm clothing, including the use of flannel, especially round the abdomen, the use of quinine wine, a

strict surveillance and immediate attention to diarrhœa, the serving out of tea and coffee before going on deck in the early morning, a supply of clean bedding well aired, the prevention of intercourse with any ship or locality where cholera exists, abstinence from unripe fruits, from excesses of all kinds, from exposure to night air, wet, hot sun, or the early morning air without food, the avoidance of fatigue, especially in the sun, and exposure to sudden chills or to long fasting. Returns were received from seven Baltic ships, which, having subsequently joined the Black Sea fleet, received the queries there. Some opportunity of forming a comparison, though an imperfect one, was thus afforded. Dr. Babington, in concluding his report, made a few remarks on it, of which the following is a short abstract. The most encouraging fact it contained, he considered to be the great disproportion between the number of attacks of cholera amongst the officers and those amongst the men. Out of 884 officers in the Black Sea fleet, there were but 5 who had the disease, and of these one was a gunner, and one a boatswain, whose habits probably assimilated more to those of foremast men than of quarter-deck officers. There were in the Black Sea, 11,488 seamen, amongst whom there occurred 705 attacks. These numbers give a proportion of 1 to 177 in the former case, and 1 to 16·3 in the latter. In the Baltic, where, in the ships which sent reports, there were 183 officers and 1841 seamen; there was a perfect immunity from cholera amongst the former, and 49 attacks, or 1 in 37·57 amongst the latter. Dr. Babington thought the difference chiefly owing to a difference in the predisposing, and in a great measure preventible causes. Amongst the men in the Black Sea fleet, the proportion of deaths to attacks was 1 to 18, and in the Baltic as 1 to 2·88. Comparing the seamen with the marines, it was found that in the Black Sea the attacks of the marines, who in number bore a proportion of 1 marine to 38 sailors, was 1 to 12; and the proportion of deaths to attacks, as 1 to 1·16, the disease being therefore somewhat more fatal amongst them, and notably more frequent than amongst the seamen. In the Baltic, on the contrary, where the proportion of marines to seamen was nearly the same, the number of attacks amongst the former was only 1 in 42·6, and there was only 1 death, or 1 in 384. Of all the suggestions as to preventive treatment, Dr. Babington thought that which recommends a shifting of locality the most valuable, as it proved successful in several instances. The report concluded with an apology for its length, which was unavoidable if justice were to be done to the subject and to those meritorious medical officers who had with so much courtesy furnished the materials.

Art. 14.—*On concurrent Scarlet Fever and Measles.* By Mr. W. B. Kesteven.

(*Journal of Health*, Oct., 1856.)

"Difficulties of diagnosis have, within a period of the last three or four years, frequently happened to the author in regard to scarlatina and measles. His number of cases, however, not having been suffi-

ciently great to serve the purpose of any useful statistical comparison, the writer has contented himself with stating the general features of the cases to which he refers, as illustrated by the subjoined (as they may be termed) representative cases.

"In the month of September of this year the writer attended five children in a house in Albany Street, Regent's Park. In each case there was indisposition for four or five days, consisting of simple febrile or catarrhal symptoms, with cough, coryza, watering and redness of the eyes. On the fourth or fifth day the severity of the symptoms abated coincidently with the appearance of an eruption of a dull reddish colour, not, to the sense of touch, elevated above the surrounding cuticle; when viewed through a lens about a quarter of an inch distance, many of its apices appeared to be desquamating on the second day. At first it looked very like the early eruption of confluent smallpox, but wanting the raised hard and granular feeling to the finger of that disease. The eruption was scattered over the body and limbs. On the face, neck, chest, and arms, it presented the irregular-shaped clusters seen in measles. The tongue was furred, and its apex was as red as a boiled lobster. The throat, in three instances, was slightly sore, and was of a scarlet colour. The pulse was rapid, but soft. The bowels rather costive. Urine scanty, but not high coloured, and free from albumen.

"These were the most prominent features observed. The variations were, that in two of the children the eruption was more distinct, the spaces of clear skin between the spots being of greater extent. Head symptoms were seen in one child, subsiding with the fever and eruption. The eruption continued apparent for from three to five days, and then rapidly disappeared; the cuticle subsequently desquamating as in scarlatina. An interval of a fortnight occurred between the subsidence of the disease in three of these children, and the first appearance of the symptoms in the two youngest. A period of two days only intervened between each case of the three eldest. Some of the children in this family had been to a school where several of their schoolfellows were absent on account of illness—said to be measles. The author had himself attended the elder children in measles two or three years previously.

"Irregularity, very similar to that described in the preceding cases, as already stated, has been met with on many occasions during the last three or four years. In some cases the first symptoms have corresponded less to those of measles than above related.

"The cases here recorded are regarded by the writer as furnishing instances of the concurrence of measles and scarlatina, the symptoms respectively of each of these fevers masking those of the other, and causing embarrassment to the diagnosis. They have, in most instances, presented a striking resemblance to the description of measles given in his 'Practice of Medicine' by Cullen as that met with in his day; while they possessed also the undoubted characteristics of scarlatina.

"This conjunction of eruptive fevers, if admitted as the correct view of these cases, presents an exception to the principle so emphatically laid down by John Hunter, and to a very great extent adopted by his successors, that two different fevers cannot exist in

the same constitution at the same time. There is little doubt, however, that this principle cannot be accepted rigidly and without modification. Many parallel instances have been cited by Mr. Marson from his own experience at the Smallpox Hospital, and communicated to the Royal Medical and Chirurgical Society in a paper read May 26th, 1847. 'Thus,' concludes Mr. Marson, 'either from personal observation, or from the writings of others, I present examples of the simultaneous occurrence of variola and scarlatina, variola and rubeola, variola and pertussis, variola and vaccinia, rubeola and scarlatina, rubeola and vaccinia, rubeola and pertussis, varicella and vaccinia, pertussis and vaccinia.'"

Art. 15.—*Treatment of Scarlatina Anginosa.* By Mr. P. H. Chavasse.

(*Assoc. Journal*, March 15, 1856.)

The paper, of which the substance is as follows, was read before the Medical and Chirurgical Society of Birmingham, on the 4th of March, 1856. After referring to the fortunate result of his practice, Mr. Chavasse proceeds:

"My plan, of late years, has been so uniformly successful (not having lost a case of scarlet fever for upwards of seven years), that I have not deemed it necessary to keep a record of cases. The system I adopt, in a case of scarlet fever, is to keep the bedroom cool—I may say cold—and to have a thorough ventilation through it: I, therefore, throw open the windows, be it winter or summer, and have the curtains and valances of the bed removed. If it be winter time, I allow the patient to have one blanket and a sheet; if it be summer time, a sheet only to cover him. If the throat be not seriously affected, I merely order a narrow strip of flannel once round the throat. If the tonsils be much enlarged, I apply a barm and oatmeal poultice to the throat, changing it night and morning. I prescribe an acidulated infusion of roses mixture, that is to say, infusion of roses, with an excess of acid, made palatable with an additional quantity of syrup, to be taken every three or four hours. This is the only medicine I give. When the child is old enough, I find roasted apples, mixed with raw sugar, very grateful to the patient.

"Here let me pause, to advise my medical brethren always to make medicines for children pleasant. The administration of nauseous medicine to children oftentimes causes sickness, disgust, and irritation, which frequently do more harm than the medicine does good.

"But to return to our subject: I avoid purgatives in scarlet fever. I never, on any account, give a particle of opening medicine for the first ten days at least. It is my firm conviction, that the administration of purgatives in scarlet fever is a fruitful source of dropsy, disease, and death. When we take into consideration the sympathy that there is between the skin and mucous membranes, I think that we should pause before giving irritating medicines. The irritation of purgatives on the mucous membrane may cause the poison of the skin disease to be driven internally, to the kidneys, throat, pericardium, or brain.

You may say, Do you not purge if the bowels be not open for a week? I say, emphatically, No!

"Now with regard to food. If the infant be at the breast, keep him entirely to it. If he be weaned, and under two years old, give him milk and water, and cold water to drink. If he be older, give him toast and water, and plain water from the pump, as much as he chooses; let it be quite cold—the colder the better. Weak black tea, or thin gruel, may be given, but caring nothing if he take nothing but cold water, unless he be an infant at the breast. Avoid broths and stimulants of every kind.

"Now, you must warily watch for a change of temperature of the skin. As long as the skin is hot, the above plan I steadily follow; but the moment the skin of the patient becomes cool, which it will do, probably, in five or seven days, instantly close the window, and immediately put more clothes on the bed. But still do not purge.

"You will find the acidulated infusion of roses most grateful to the little patient; it will abate the fever, it will cleanse his tongue, it will clear his throat of mucus, it will, as soon as the fever is abated, give him an appetite. I believe, too, the acid treatment has some peculiar properties of neutralising the scarlatina poison. I do not pretend to explain how, or why, or wherefore.

"When the appetite returns, you may consider the patient to be safe. The diet must now be gradually improved. Bread and butter, milk and water, and arrow-root, made with equal parts of milk and water, may be given for the first two or three days. Then a light batter or rice pudding may be added; and, in a few days afterwards, a little chicken, or a mutton chop.

"Within the last few years I have had some fearful cases of scarlet fever; but, relying on this plan of treatment, I have given, even in very bad cases, a very favorable diagnosis. I have had cases where there have been violent headache and delirium; where there have been immense swellings of the parotid and submaxillary glands; where there have been enormous enlargement and ulceration of the tonsils; where a great portion of the fluid that has been taken by the mouth has escaped down the nostrils; where there has been a purulent discharge down the nose, which discharge has in many instances quite excoriated the skin over which it has travelled;—and yet in such cases the patients have invariably recovered.

"There is another important regulation I lay great stress upon. I never allow a scarlet-fever patient, even if the attack be mild, to leave the house under the month in the summer, and then not if the wind be in the east or north-east; nor under six weeks in the winter. During the last seven years, I have never had anasarca from the scarlatina; and I attribute it entirely to the plan I have just recommended, and in not allowing my patients to leave the house under the month—until, in fact, the skin that has peeled off has been renewed. Dr. Watson, in his valuable lectures, gives some advice on this subject. From the sixteenth to the thirtieth day I watch the case assiduously, to assure myself that there be no dropsical approach, carefully examining the urine, ascertaining that there be plenty of it, and that it be not albuminous.

"Let me now sum up the plan I adopt:

"1. Thorough ventilation, a cool room, and scant clothes on bed, for the first five or seven days.

"2. A change of temperature of skin to be carefully regarded. As soon as the skin is cool, closing the windows, and putting additional clothing on bed.

"3. Infusion of roses with an excess of acid, sweetened, the only medicine to be given.

"4. Purgatives to be religiously avoided for the first ten days at least, and even afterwards, unless there be absolute necessity.

"5. Leeches, blisters, emetics, and cold and tepid spongings, inadmissible in scarlet fever.

"6. A strict antiphlogistic diet for the first week, during which time cold water to be given *ad libitum*.

"7. The patient *not* to leave the house in the summer under the month; in the winter, under six weeks.

"My firm conviction is, that purgatives, emetics, and blisters, by depressing the patient, sometimes cause scarlatina anginosa to degenerate into scarlatina maligna; for although I have had numerous cases of scarlatina anginosa (my practice being much among children), and some of the cases very severe ones, I have never had, since I have adopted my present plan of treatment, one single case of scarlatina maligna. I have such faith in my present plan of treatment, that, if it be duly followed out, I should seldom despair of even the worst of cases recovering.

"I am aware that some of our first authorities advocate a different plan to mine. They recommend purgatives, which I may say, in scarlet fever, are my dread and abhorrence. They advise cold and tepid spongings—a plan which I think dangerous, by driving the disease internally. Blisters, too, have been prescribed: these I consider weakening, injurious, and barbarous, and likely to irritate the already inflamed skin. They recommend leeches to the throat, which, I am convinced, by depressing the patient, lessen the chance of battling against the disease, and increase the ulceration of the tonsils. Again, the patient has not too much blood: the blood only is poisoned. I look upon scarlet fever as a specific poison of the blood, and which will be eliminated from the system, not by bleeding, not by purgatives, not by emetics, but by a constant supply of fresh and cool air, by the acid treatment, by cold water as a beverage, and for the first few days by a strict antiphlogistic diet.

"Sydenham says, that scarlet fever is oftentimes 'fatal through the officiousness of the doctor.' I conscientiously believe that a truer remark was never made; and that, under a different system to the usual one adopted, scarlet fever would not be so much dreaded."

(c) CHRONIC DISEASES.

Art. 18.—*On Leukhemia.* By Professor Virchow.

(*Dublin Hospital Gazette*, Aug. 15, 1856.)

Professor Virchow, in a paper which appeared in the 'Gesammelte Abhandl. zur Wissenschaft. Med.,' early in this year, adds some important facts to those which have hitherto been collected regarding this malady. Professor Virchow published his first case of this disease (which he met with and had an opportunity of examining after death, in the Charité Hospital at Berlin, on the 1st of August, 1845), in the 780th number of Froriep's 'Notizen.' He then gave it the name of "Leukhemia," or white blood; but Professor Bennett, of Edinburgh, in his elaborate work on this subject, has preferred the name leucocythemia, as expressing more literally the leading pathological features of the disease. In the paper, however, from which the following is extracted, Professor Virchow states, that he sees no sufficient reason to set aside the name which he originally adopted; he is of opinion, also, that the study of leukhemia is at the present day more advanced than that of many of the diseases described by the physicians of old; and among diseases of the blood, one can hardly name any better known in its development, its progress, and the details of its symptoms.

The blood normally contains a certain proportion of white corpuscles; these corpuscles increase in number under the influence of certain physiological conditions, as during digestion, pregnancy, and some pathological states, as inflammatory and typhoid affections; but these transitory states are no more the expression of a true dyscrasia, than heat and acceleration of the pulse after a meal are analogous to fever.

Up to the present time, continues Professor Virchow, almost without exception, this disease is permanent, surely running its slow and fatal course; and towards the close of life the white corpuscles are in immense excess. In one case, the proportion of the white to the red corpuscles was as 2 to 3; in another, observed by Vogel, as 1 to 2; in a third, by Schreiber, as 2 to 3. The numbers given by Pury 1 to 7, 12, 19, and 21, do not correspond with extreme degrees of the complaint; nevertheless, they express a very marked and singular alteration in the blood, when one thinks that the normal proportion is as 1 to 357 or 355.

Blood which flows spontaneously, or is obtained artificially during life, is not so modified that one can judge from its colour and with the naked eye of its alteration; but when it has been defibrinated and let stand for a time, the red corpuscles fall to the bottom, and the white form a layer over them of a yellowish-white purulent appearance. This separation takes place in the dead subject in a manner no less distinct, for in the right side of the heart and pulmonary artery are found soft, unresisting clots of a yellow colour, apparently formed of pus.

The quantity of white corpuscles is not the same in all parts of the body of a patient suffering from leukhemia; and the physiologists Lhéritier, Beclard, Lehmann, Kölliker, have pointed out this unequal distribution, independent of any specific disease.

If certain organs have the property normally, or under certain pathological conditions, of actively contributing to the destruction of the red globules, the venous blood quitting such an organ should contain a large proportion of white; and such is the case of the spleen, for analysis has shown that in leukhemia the blood of the splenic vein is twice as rich in colourless globules as that of the jugular.

According to Professor Virchow, two forms of leukhemia exist (*splenic* and *lymphatic*), the one introducing into the blood the element constituting the pulp of the spleen; the other, elements analogous to the parenchyma of the lymphatic glands. As the disease of the glands is found more marked, so are the lymphatic elements found more abundant in the blood, and the coincidence of an affection of the spleen does not cause the blood to lose the characters which it gets from the admixture of the histological principles of the lymphatic glands; and *vice versâ*, when the alteration of the spleen is predominant, and the neighbouring glands are secondarily affected, the modification of the blood retains its splenic character.

The chemical analysis of the blood in leukhemia has furnished interesting results: the researches of Vogel, Parkes, Robertson, and Drummond have shown that the albumen, the fibrin, and the salts of the serum, are in their normal proportions, that water is in excess, and that the solid elements, especially the red globules, are diminished; in fact, that there is no change in the composition of the blood plasma, but merely a substitution of the white globules for the red.

The swelling of the lymphatic glands is ordinarily slow in its progress, but not invariably so; thus in the case given by Rinecker, the disease made its appearance after a cold bath, and commenced by swelling of the cervical glands, which rapidly acquired a considerable size; later the axillary and inguinal glands became affected, there was fever, and the glandular enlargements were hot and painful. And in two other cases reported by Mohr and Vogel, the symptoms followed the same course. Sometimes, on the other hand, the tumours grow very slowly; in one case, the patient, aged 42 years, had been for two years the subject of indolent glandular hypertrophy; in another the glandular swelling dated twenty years back, occupied different regions of the body, and it was during his residence in hospital that any disposition to inflammation of the lymphatic vessels first appeared.

The glands do not in general show any morbid material in their structure, merely a simple increase of their normal elements; externally they seem soft and elastic, having a sort of false fluctuation, their surface is smooth, sometimes shining, and of a colour varying from white to yellow or gray. On section, the cortical portion is found thickened, and the cavernous tissue of the hilum also hypertrophied. The cortical portion is more homogeneous, gray, or of a reddish white. The normal division of the follicles is hardly to be distinguished, the parenchyma is soft and friable, and there exudes a

milky fluid. The mass, under the microscope, resembles the infiltration of the intestinal follicles in typhus.

The lesions of the spleen are more complex. As to the development of the tumour, we find its progress and symptoms sometimes chronic and insidious, spreading over many years, yet sometimes proceeding with rapidity, accompanied with fever and pain. Uhle has observed, as Virchow has also pointed out, the excretion of a great quantity of uric acid and urates in the urine during febrile attacks; and this condition of the urine may be the more surely regarded as connected with the affection of the spleen, as Scherer has found uric acid and hypoxanthine in that organ.

The spleen is almost always very much increased in volume, attaining occasionally twelve or fifteen times its normal weight; there are generally found very manifest traces of perisplenitis, the capsule is almost always thickened, opaque, milky, having spots and thickenings scattered more or less widely over its surface, the latter sometimes half cartilaginous. There also exist adhesions to the surrounding parts, particularly the diaphragm and retro-peritoneal tissue. The specific gravity of the organ seems increased, it is more resisting than natural, and its tissues often seem bloodless; it is of a pale or yellowish red, sometimes brown.

The large vessels only seem to be of large calibre and to remain open; the follicles are small, often badly defined, and indistinct. However, they are to be found on a close examination, since, by their whitish colour, they can be distinguished from the red pulp. The spleen pulp is exceedingly abundant, very resistant, almost elastic, and hard to tear; the thickened trabeculæ are easily seen. The examination with the microscope shows everywhere the normal elements, but more abundant and more condensed than natural; the substance intermediate between the cells and the pulp is more considerable and more solid than it should be; it is not unusual to find some pigment passing from yellow to red, or from gray to black. Very often points are met with, more or less scattered on the surface, of a red colour, so intense as to mark them out from the rest of the tissue; later this redness assumes a hemorrhagic appearance, and the spots, at first slightly raised, dip in at a more advanced period, become compact and dry. The colour alters from red to yellow or a dirty gray; the little mass becomes caseous or tuberculous, and at length ends by being transformed into a sort of yellow, greenish, or red cicatrix. Examined microscopically, the normal elements of the spleen are discovered in a state of dissolution.

Another organ, besides the lymphatics and the spleen, is attacked in the course of this disease—the liver, which becomes the seat of an hypertrophy, so that its weight increases to from eight to fifteen pounds; usually as it increases in weight it does so also in density, and sometimes resembles the cirrhosed liver. Uhle has discovered many little granules of a dirty white colour, presenting the appearance of semolina. In one case Professor Virchow saw in the liver small white points scattered through its parenchyma, of the size of an hepatic lobule, and, indeed, they seem to have taken the place of the lobule; one of these white points was developed to the size of a pea, and there was ex-

tracted from it a fluid which contained the elements of the lymphatic glands.

Much still remains to be learned as to the commencement and early stages of this disease, of which there is not, at the present time, one single case whose cure can be positively stated. With regard to it in its more advanced degree, the following facts seem to be distinctly ascertained:—The disease is always febrile, and the fever assumes the hectic form; the patient dies in a state of marasmus; the digestive and respiratory derangements take place early; the disposition to diarrhœa is interrupted by occasional attacks of constipation; the dyspnœa is carried sometimes to such a pitch, that it cannot be accounted for by muscular or pulmonary disorder, but seems to depend directly on the intimate constitution of the blood.

ART. 17.—*Case of Idiopathic Gangrene of the Four Extremities, resembling Gangrenous Ergotism.* By Dr. BERNARD HENRY, Surgeon to the P. E. Hospital, Philadelphia.

(*The Phil. Examiner*, March, 1856.)

This case presents many points of interest. It resembles very closely the gangrenous form of ergotism, of which a case was recently related in the 'British and Foreign Medico-Chirurgical Review,' by Dr. T. Camps (*v.* 'Abstract,' xxii, p. 39); but, at the same time, it differs from this affection in the absence of spasmodic symptoms, and in the fact that the intellect remained comparatively clear up to a very short period before death. The patient, it appears, had eaten rye-bread shortly before her illness began, but there was no evidence that this was of bad quality. On the contrary, it was ascertained that she had always had abundance of good food. Dr. Henry remarks, that there were many points of resemblance between this case and the cases of "dry gangrenous leprosy" which had fallen under his notice in the Hospital of St. Lazarus, at Bahia. The case itself occurred in the P. E. Hospital, Philadelphia.

CASE.—J. C—, widow, æt. 42, sempstress, dark hair and eyes, was admitted November 22d, 1855. She was a native of Maryland, but for some time past had resided in this city. By her own account she had led a very irregular, dissipated life, and had been very intemperate. She had been treated for syphilis in the Blockley Hospital; had given birth to nine children, besides having had frequent abortions intentionally produced.

On admission, she stated that she had been labouring under a persistent diarrhœa during the past summer, which did not yield to remedies, and by which her health and constitution were much impaired.

The symptoms of the present disease made their appearance about two weeks previously. November 9th, on returning from the yard, where she had been washing some articles, she felt a stinging sensation in the hands and feet. They were rendered more painful by scratching, and assumed a dusky red colour, which became more livid and intense up to the date of her admission into the hospital.

Dr. West, who had previously seen her, considered that she was labouring under purpura, to which disease her symptoms then bore a strong resemblance.

When she first came under my care, her condition was as follows: the countenance icterode, with an anxious expression, the conjunctivæ yellow, eyelids puffy, the intellect remarkably clear, the hands and forearms, for about a third of their length, of a leaden hue, deepening off to the fingers; these were flexed on the hand, black in colour, and dry and shrivelled in appearance. The feet and lower third of the legs were in a similar state. The tip of the nose and the skin over both patellæ were of a dusky colour, as though brushed over with bronze paint. The tongue was not much coated, but was marked with two longitudinal reddish-brown stains. The pulse was 80, quick and small.

The affected extremities were icy cold to the touch, and sensibility was so destroyed that the prick of a pin inserted in them was not felt. Sensibility above the line of discoloration was acute.

Movement gave much pain; the weight and warmth of the bed-clothes could not be borne; the cold air was more agreeable. The cartilages of the ears showed a commencing similar condition. The bowels at this time were constipated, and the urinary secretion small in quantity.

She was ordered milk punch, opium, and nutritious diet. Dr. West had previously prescribed a draught containing a drop of creosote, every four hours. The legs were enveloped in cotton wadding; this was afterwards removed at her own request.

November 24th.—The discoloration of the extremities has extended up an inch higher, no line of demarcation is perceptible, the livid hue shading off into the normal colour. The pulse remains small, and the urine scanty. Ol. Terebinth., gtts. x, every fourth hour, were added to the treatment.

26th.—Vesications, filled with a dark red serous fluid, made their appearance at the edges of the discoloured parts. A specimen of urine was obtained passed before breakfast. It was high coloured, of a reddish tinge, sp. grav. 1010, reaction alkaline, and exhibits mucus and purpurine.

The case progressed without much alteration in the general symptoms. The lines of demarcation between the sound and affected parts by degrees became more distinct. There was a copious discharge of serous fluid from the vesications. Morphia was given at night to procure sleep, and laxatives to regulate the bowels.

30th.—Ordered Sulph. Quin., gr. j; Tinct. Cinchon., ʒij, every two hours; milk punch, opium, &c., to be continued.

December 3d.—The parts are now quite black and dry. The lines of demarcation are distinct, and a slight odour is for the first time perceptible; she sleeps well, and expresses herself as feeling better generally.

Sp. grav. of urine 1010, with an acid reaction. Directed light warm water dressings.

7th.—Pulse in right carotid and brachial artery 92, small and soft. Tongue reddish brown and dry. Temperature under the tongue 102° Fah., in right axilla 96°, in left axilla 100°, right foot and leg 62°, left do. 61°. Temperature of ward, 62°.

During the following five or six days her condition underwent very little change. The suppuration increased, with a most offensive, peculiar odour, unlike that of ordinary gangrene. The limbs were dressed with solution of chloride of soda. It was necessary to increase the doses of the opiates to produce sleep; the urine was secreted in very small quantities, insufficient for examination, and she was ordered to take acetate of potassa, the creosote to be discontinued.

11th.—Her symptoms more unfavorable, appetite bad; urine still defi-

cient; pulse 80, small. Directed as a diuretic, Potass. Bitart., grs. iij; Potass. Iodid., grs. ij, to be substituted for the acetate of potassa. Beef tea to be added to the diet.

12th.—Complains of burning pain in her stomach; great desire for cold drinks. Vomiting. Tongue dry and brown, passed very little urine, pulse 100°, small. The process of separation more advanced upon the arms than upon the legs, it having extended nearly down to the bone. Upper part of left leg somewhat swollen and infiltrated; changing and removing the dressings causes great pain. From this date to the 15th, no change.

The spirits terebinth. discontinued, owing to the irritability of the stomach.

20th.—Rather better. Urine still scanty, tongue moist. Takes 2 grs. sulphate morphia at night, ¼ gr. every three hours during the day. Complains much of gagging and disposition to vomit, caused apparently by fetor. Her appetite continues very bad, with great irritability of the stomach. The line of separation on the arms is complete. The gangrenous portions are dark, dry, shrivelled, resembling an Egyptian mummy, united only by bone and tendon to the sound parts, which show a disposition to granulate.

26th.—As she appeared rather better than usual to-day, the tongue moist, pulse soft, bowels naturally opened, and urine more abundant, the right hand was removed by sawing through the exposed bones. The granulations were dissected up, to make as fair a stump as possible under the circumstances. No vessels were taken up, but the cut extremities of the bone bled freely. She experienced very little pain, and no inconvenience from the operation. I wished to remove the left hand also, but postponed it at her own request. Directed comp. spts. of lavender, with syrup of ginger and mineral water, to allay thirst and vomiting, with an opiate injection at bedtime.

28th.—Removed the left arm. No disturbance to the patient, the bone, as in the first instance, perfectly sound, and bled freely. Arrested hemorrhage by cold water. No vessels secured.

30th.—The patient seemed better this morning, having slept soundly for a couple of hours. Tongue pale and clean, pulse small and soft; temperature under the tongue 100°; appetite bad, disposition to vomit.

Very little change took place during the following week; the stumps showed a disposition to heal well, and the line of separation between the sound and gangrenous parts of the lower extremities was so marked as to justify their removal by amputation, did her strength permit.

Her appetite, however, continued bad, she rejected nearly all food, and sleep was procured only by means of large doses of opium.

Tonics and stimulants were administered whenever they could be retained.

On referring to the notes, I find, January 13th, that for the last two days she has been sinking; her mind, which up to the present has been remarkably clear, begins to fail, she has become irritable, and her sensibilities appear blunted. She partially recognised those around her, but could not speak.

January 14th.—She remained in a comatose state during the day, and died at half-past five in the evening.

Autopsy, thirty hours after death.—Emaciation not very great. On opening the thorax and abdomen the viscera were found remarkably dry, scarcely any moisture; very little blood in cutting across the large arterial trunks. The whole venous system appeared engorged with black, thick blood. The lungs were perfectly healthy. Adhesions of the right pleuræ. On opening the pericardium, no fluid was found. The heart was rather small,

the coronary veins engorged, as was the whole venous system. The tissue, also, of this organ was more soft than natural, with a tendency to fatty degeneration, and slight fatty deposits in the valves. The pulmonary artery and valves were natural in their structure, but contained a venous clot. The auriculo-ventricular opening was contracted, so as with difficulty to admit the finger. The valves of the aorta were normal; a coagulum was found in the descending aorta. The brachial and femoral arteries were dissected up and examined; they presented no unnatural appearance, but were found adherent to the bone, and closed at the line of demarcation.

On opening the abdomen, the liver presented itself fatty and very much enlarged. There appeared to be commencing cirrhosis; there was resistance to the knife on cutting through the lobuli of that viscus.

The other organs presented nothing remarkable.

Art. 18.—*On the transmission of Syphilis from the Fœtus to the Mother.* By Mr. Hutchinson, Surgeon to the Metropolitan Free Hospital.

(*Medical Times and Gazette*, Oct. 11, 1856.)

The following are the general conclusions arising out of a table of fifty cases in which a syphilitic taint was believed to be communicated from the fœtus in utero to the mother:

1. That women pregnant by fathers suffering from constitutional taint are very liable to receive the disease from the fœtus.

2. That, when this occurs, the form of disease manifested by the mother will resemble closely that of the father.

3. That syphilitic cachexia, and symptoms of the late tertiary class (palmar psoriasis, fissures of the tongue, leucorrhœa, serpiginous cicatrizing ulcers, and nodes) are the most frequent manifestations of taint thus derived.

4. That the reason why, under these circumstances, severe outbreaks of symptoms of the secondary class so very rarely occur is, that the father has, in almost all cases, long passed that stage, and possesses only a taint of the blood or late tertiary manifestations.

5. That the disease thus derived is not zymotic, *i. e.*, that its severity will depend directly on the amount of the contagious material received, and on the constitutional vigour of the recipient, and that increase of symptoms and relapses may be produced by repetition of exposure to contagion.

6. That proneness to abort is not nearly so frequently observed in this class of cases as in that in which the mothers have themselves had primary syphilis.

7. That contamination by pregnancy offers a satisfactory explanation of most of the cases of so-called contagion of secondary syphilis.

8. That it is extremely doubtful if "contagion by the seminal fluid" be possible, cases being extremely rare in which married women who have never conceived become the subjects of constitutional taint, without having had primary symptoms, and are in all probability to be explained as errors of observation. (The author had met with but one case of this class.)

ART. 19.—*On Mercurial Fumigation in the treatment of Syphilis.* By Mr. HENRY LEE, Surgeon to King's College and the Lock Hospitals.

(*Medical Times and Gazette*, Aug. 2, 1856.)

The paper, of which this is an abstract, was read before the Royal Medical and Chirurgical Society on the 24th of June, 1856.

After giving a sketch of the early history of fumigation in syphilitic complaints, its use, abuse, and abandonment, chiefly on account of the cumbrous and inconvenient apparatus employed, the author proceeds to notice the more modern procedure recommended by Mr. Langston Parker. He then points out the practical objection to the use of the gray oxide of mercury, arising from its very uncertain composition as procured from the shops, and finding, from experience, that it was the light-coloured oxide alone which volatilized and produced its effects upon the constitution, and having reason to believe that the light colour was due to the presence of calomel, the author performed a series of experiments with calomel alone, or mixed in a certain proportion with the gray oxide, the general result of which went to satisfy him, that for the purposes of mercurial fumigation, 5 or 10 grains of calomel alone, are, in ordinary cases, quite sufficient; and that when the gray oxide is used, the admixture of a few grains of calomel will facilitate its sublimation, and ensure its medicinal action. Upon making comparative trials with the calomel alone, and combined with steam (as in Mr. Parker's apparatus), it was found to act more certainly and with greater regularity in the latter case. The following simple plan was suggested by the author: Two small spirit-lamps are used; over one of them is a thin metallic plate, upon which the calomel is placed; over the other a cup of hot water. The patient sits upon a cane-bottomed chair, placed over the lamps, enveloped in a blanket; or, if greater economy be necessary, the patient may heat a thick tile in the fire, place it in a night-stool, with a gallipot of hot water upon one corner of it, sprinkle the calomel over the surface of the tile, and sit over it enveloped, as before, in a blanket. The advantages of this simple mode of administering mercury to the system are, rapidity of action, while at the same time but little constitutional disturbance is produced, and all the severe train of symptoms of irritation and debility attendant upon the prolonged internal administration of the mineral are avoided. The small amount of heat used for the purpose of volatilizing the calomel in this apparatus, constitutes the essential difference between Mr. Lee's mode of using the vapour of calomel, and any former trials with that form of mercury; for if the temperature be very high, the calomel is at once converted into vapour and dissipated. The paper is accompanied with a tabular view of twenty cases in which the gray oxide was used, either alone, or in combination with calomel, and calomel was used alone, and shows the age, sex, form of disease, preparation of mercury used, and the time at which the mouth became affected by the fumigation; the result being,

to prove that the patient's system can be as readily influenced by a small quantity of calomel in vapour, as by a large quantity of the gray oxide or bisulphuret of mercury.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 20.—*A case of Softening of the Brain in a child.* By Dr. F. CHURCHILL.

(*Dublin Quarterly Journal of Medical Science*, Aug., 1856.)

This case, which is related in the Transactions of the College of Physicians in Ireland, is preceded by a slight sketch of what is laid down in books upon such cases—a sketch which leads to the inference: 1. That inflammation and softening of the cerebral substance is somewhat rare in children. 2. That it is generally said to be accompanied with pain, obscuration of the intellect, disorder of the senses, convulsions, or paralysis, or all of these symptoms, according to the severity and duration of the attack. 3. That, however rare, cases have been recorded in which few or none of these symptoms were present, and yet the patient died of ramollissement—whether inflammatory or not, may be disputed, but in which the disease appeared as a primary affection. 4. That such cases, from their rarity and difficulty of diagnosis, possess great practical interest; and that it is only by the collection of individual cases that we can hope to arrive at any positive conclusions.

CASE.—"On Tuesday, the 21st March, I first saw A. B., æt. 9½, a little girl, of a slight, delicate appearance, with very fair skin and red hair, and of unusual intellectual activity—a member of a family rather obnoxious to head affections: first complained of severe headache on Monday, March 17th, 1856. We have since found reason to believe, however, that she had been unwell for more than a week, but, as she was anxious to compete in some school examination, she concealed her illness from her mother. On the Monday, however, the pain was too violent to be longer hidden, and it continued without intermission, though with aggravated paroxysms, until I saw her. During this time she slept well, and had some appetite, but no fever. She insisted upon going to school on Wednesday, and was sent home, much the worse for the exertion and excitement.

"I found her in bed, complaining of severe pain and throbbing in the head (especially at the top), which increased occasionally to an almost intolerable degree. There was neither intolerance of light nor sound at that time. Her intellect was as active and clear as usual; she spoke freely, nor did she dream when asleep. There were neither startings, convulsions, nor stupor. The pulse was 74; neither full nor feeble, but slightly irregular. She had vomited once or twice, but, upon inquiry, I found that it was always

after taking food or medicine; however, she took many things without vomiting; she complained of no nausea; the tongue was loaded, but furred and moist; the bowels were quite regular. The sensitive and motive powers were perfectly natural.

* * * * *

"I found it impossible to come to any positive conclusion, and, if I have clearly described the case, it will be probably conceded to me, that the wisest thing I could do was, to suspend my judgment until the course of the disease should elucidate its nature. Meantime I treated the case very cautiously, so as to meet the possibility of its being inflammation of the brain or its membranes. Leeches were applied, and the legs were fomented; a brisk purgative was given, followed by Hydrargyrum cum Creta and James's powder at short intervals.

"Whether the course of the disorder did elucidate its nature, remains to be determined; but, omitting *daily* reports, I shall state merely the changes in the symptoms throughout, in a more connected, though cursory manner, premising, that the patient died on Wednesday, April 2d—the sixteenth day of her illness.

"The headache continued as bad as ever throughout the entire illness, unless, perhaps, the last two days, increasing in paroxysms, and accompanied by moaning. Still she slept very well at night, from which I infer, that the pain must have remitted; but she almost always woke with it. The sleep for the most part was sound and natural, but one or two nights it was so deep, as to resemble stupor while it lasted. Her intellect was clear throughout; there never was anything like delirium. At first she spoke freely; but as the disease advanced, she either could not or would not make the effort to speak—I rather think the latter, as she occasionally spoke a few words, quite intelligibly, up to the last day; up to within an hour of her death, she evidently recognised those around her. She never had either startings, squinting, the least convulsion, or loss of power. Occasionally, but not frequently, she yawned. The vomiting ceased entirely the day after I first saw her, and never returned, There was no thirst up to the twelfth day, and no appetite; the bowels required, at first, a little medicine, but afterwards she was troubled with mercurial diarrhœa. The urine was secreted in the usual quantity, and of the usual appearance; but towards the end she had twice some delay or difficulty in passing it, which speedily disappeared.

"The senses at first seemed more acute, both light and noise annoyed her, but, after a few days, this diminished; a strong light seemed disagreeable, and throughout, although the pupils answered to the light, I should say that, considering the position of her bed, facing the window, they were ordinarily more dilated than one would have expected.

"The pulse, I have mentioned, was at first about 72, and slightly irregular; but this irregularity disappeared after two days, and never returned; when asleep it was below 70. This continued up to the twelfth day, when suddenly, in the afternoon, a smart outburst of fever occurred; the skin became hot (having been quite natural previously), the pulse rose to 120, and there was great thirst. I do not think the headache was worse, and no nervous symptoms were developed. This attack lasted five or six hours, and then subsided, without perspiration. She fell asleep, and in the morning I found a complete remission. The same attack was repeated on the thirteenth, fourteenth, and fifteenth days, but rather less severely each day; so that on the day she died, the prospect seemed rather less dark than previously; although the exact nature of the disease seemed, if anything, rather more obscure.

"Thus, on April 2d, at 9 o'clock, of the sixteenth day, she took beef tea, swallowed well, recognised those around her, and seemed unusually free from headache and fever. At 10 o'clock she suddenly became insensible, but not convulsed; the breathing became laborious and rattling; the pulse quick and weak; lips blue; countenance livid; and at 11 o'clock she died quite calmly.

"However puzzled I might be to explain satisfactorily the nature of the attack, it was quite clear that there were grounds for very serious apprehension, and that the wiser plan would be to treat the case as disease of the brain, with such modifications as the symptoms called for; and in this view I was fortunate to have the concurrence of Sir H. Marsh, who saw the patient with me soon after the commencement of my attendance, and up to the day but one before she died. We applied leeches to the head and feet, blisters constantly renewed to the neck and head; ice to the head; mustard cataplasms to the legs; gave Hydrargyrum cum Creta, subsequently calomel and James's powder, until diarrhœa had set in, and afterwards James's powder alone, and mercurial frictions; but I cannot say that even temporary relief appeared to result from any of these measures.

"Having obtained permission to examine the head, Dr. M. Collis was good enough to make the post-mortem dissection, about twenty-four hours after death. There was no congestion of the scalp, but on raising the skull, we found the superficial vessels of the brain were somewhat fuller than usual; there was no opacity of the arachnoid, no tubercular deposition, and no effusion. The substance of the brain was natural to a considerable depth, but we found the posterior portion of the great commissure of the brain, the fornix, and septum lucidum, so much softened as to be semifluid. It was of much the usual colour, neither yellowish nor reddish. A superficial layer of the corpus striatum was also softened. The ventricles contained a considerable quantity of opaline serum; and there was more beneath the arachnoid of the cerebellum, and at the base of the brain, but nowhere did the membrane exhibit marks of inflammation.

"Thus we see that we may have fatal softening and effusion, with an absence of almost all the symptoms which are usually attendant on these affections; for the only permanent symptom in this case, and, I may add, aspect of serious disease, was the headache. Neither fever (at first) nor disorder of the senses or intellect, no starting, convulsion, nor paralysis, no continued vomiting nor obstinate constipation, marked the disease. Towards the end, indeed, a change took place, and then the aspect of the complaint rather resembled remittent fever than anything else.

"There is, however, a very important question remaining for consideration, viz., the relation, in point of time at least, of the softening and the effusion. Was the case one of inflammation of the brain running on into softening, followed by effusion; or was it a case of arachnitis, in which the softening was a secondary consequence, as noticed by Rilliet and Barthez? So far as we may venture to draw an inference from the history of the case, I think it is in favour of the softening being the primary disease, for we know, as in the case to which I alluded in the commencement of this notice, that ramollissement of the central nervous structure may exist with but few symptoms; whereas I believe it to be extremely rare, if it ever occurs, that meningitis should run a course of sixteen days at least, with such an utter absence of the ordinary characteristic symptoms.

"My own impression is, that the primary affection was inflammation of the central portions of the brain, and that the membranes participated in the morbid action, about the time when the febrile action set in; but that the

effusion did not occur until the morning of the day on which she died, and that it was the immediate cause of death."

Art. 21.—*Delirium Tremens in a young child.* By Dr. Weiss.

(*Pr. Ver-Ztg.*, viii, 1856; and *Schmidt's Jahrb.*, v, 1856.)

This case is briefly related as follows:

Case.—Pat. —, æt. 4½, the son of a publican, had for some time had such a love of alcoholic stimulants that he would employ all manner of tricks to get them. On ordinary occasions he would sleep off the attacks of drunkenness which were caused when these tricks succeeded, but on the present occasion, having been severely punished by his father, he fell into a spasmodic condition, and fancied that mice were running over him—he fell, in short, into a condition in which all the symptoms of delirium tremens were present. It was necessary to give full doses of morphia before the symptoms yielded. The author states, that the love of stimulants had arisen out of the doses which had been given by the parents when the child was quite an infant, with a view either to strengthening or else to quietening him; and he also refers to an analogous case in a child, æt. 5½, which is recorded in Constatt's 'Handb.,' iii, p. 156.

Art. 22.—*Case of incipient Mania, cured by large doses of Opium.* By Mr. Pye H. Chavasse, of Birmingham.

(*Assoc. Med. Journ.*, Sept. 6, 1856.)

The value of full doses of opium in many cases of insanity, a fact sufficiently known to many, though not yet properly appreciated by all, is well illustrated in the following case:

"Case.—Miss T—, housekeeper, æt. 41, of melancholic temperament, had amenorrhœa in the summer of 1854, which lasted three or four months; but, in the September of the same year, she became 'regular,' and continued so until I commenced attending her—that is to say, until and during the beginning of her attack of mania.

"My attendance upon her commenced on the 13th of August, 1855. The following particulars of her previous history are all that I was able to glean. She had been a little nervous and eccentric, and had complained of occasional pains in her head, principally at the top and back of the head, and could not sleep well at night; otherwise, she was able to attend to her duties. Not feeling quite well, she returned to her father's house.

"A few days before I was called to see her, decided symptoms of mania showed themselves. She became morose and taciturn, sitting for hours without speaking a word, and staring upon vacancy. When spoken to, she would answer only in monosyllables, and even then not always to the purpose. Her natural disposition was gentle, obliging, and affectionate. She could not sleep at night; she had not slept for many days. Although usually taciturn, she occasionally sang a few words, repeating the same over and over again, to a low and monotonous tune. It was necessary to watch her night and day; as, from her manner and gestures, there were indications that she meditated self-destruction. She occasionally became very violent, requiring two or three persons to hold her down. At these times, her father and friends urgently

requested me to send her to a lunatic asylum. I begged them to have a little patience, and to let me try for a short time longer the plan of treatment I was then adopting, before sending her from home.

"*Treatment.*—I first gave two grains of solid opium and one grain of Castile soap, made into a pill, every night and morning, for two or three days. These doses had no effect in producing sleep; I therefore increased the dose of opium to three grains every night and morning. She continued these increased doses for several days. Still no sleep. I then enlarged the dose to four grains every night and morning. She now had snatches of sleep; but did not sleep more than half an hour or an hour in the day and night. I now gave her five grains of opium every night and morning; and with the happiest results. She now slept six or seven hours in the night without waking, and all symptoms of insanity left her. As soon as she could sleep, I gradually reduced the quantity of opium; so that in a short time she only took two grains of opium every night; and, after a few weeks, I was able to discontinue it altogether. She is now, I am happy to say, quite well.

"I may state, that as long as she was taking *moderate* doses of opium, the bowels were constipated, requiring aperients; as soon as I resorted to *large* doses, the bowels acted without the necessity of administering a particle of opening medicine.

"August 25th, 1856.—A year has now elapsed, and I have the satisfaction of recording the fact, that she has not had the slightest return of maniacal symptoms. Since her illness she has not been again 'regular;' although, for two or three months after her recovery, I endeavoured to make her so, by giving her preparations of iron. She considers herself to be quite well."

Art. 23.—*Hydrochlorate of Morphia and Coffee in Cephalalgia.* By M. Boileau.

(*Rév. Méd.-Chir.*, Feb., 1855.)

M. Boileau informs us in this paper that he has often found hydrochlorate of morphia, dissolved in a strong solution of coffee, of the greatest service in severe headache; and he relates a case in illustration, in which a headache of the most intense character, and brought on by the most trivial causes, as exposure to a slight draught, was relieved in this way. In this case, moreover, the pain had resisted the morphia and the coffee given separately. M. Boileau's practice is, to give a dose—about half a grain of morphia in a small cup of hot, strong coffee—as often as the pain recurred, and to do this as often as was necessary; and his experience goes to show that the attacks will rapidly become less and less frequent, until at last they cease altogether.

Art. 24.—*On Neurosis of the Vagus.* By Dr. C. J. Shearman.

(*Medical Times and Gazette*, Sept. 20, 1856.)

"Since 1849, my attention has been engaged by a class of cases which have presented symptoms of peculiar characters, and deranging both mental and bodily functions. The essential mental symptoms have been—depression of spirits, leading to a gloomy view of the posi-

tion of the patient, everything in the world being against his comfort and happiness; his judgment so impaired as to be incapable of drawing, by any means, a correct conclusion from premises; so great vacillation of the mental faculties as to effectually prevent any plan devised from being pursued to a satisfactory result; impairment of memory; exaltation of imagination, and excessive deficiency in the acts of volition; a kind of dreamy *laissez faire* taking the place of the command which a healthy man feels he has over the circumstances of life.

"The symptoms of bodily affection are those of lassitude and malaise, most marked in the morning, always less in the evening, and almost completely removed by indulgence in society; a feeling of exhaustion located at the epigastrium, relieved by outward pressure, the ingestion of food and exhibition of stimulants; frequently a sensation of gnawing, tearing, or indescribable uneasiness is added to this feeling of exhaustion; cough, without expectoration; yawning; sighing and nausea occurring between the meals, but never following them; palpitation on the least exertion or annoyance; vertigo, tinnitus aurium, and incomplete direction of muscular effort, with deficient muscular sense; constipation, and free urinary secretion, with dry skin. The whole of these symptoms observe a periodicity, sometimes tertian, at others quotidian; and, under both forms, the period of exacerbation is antemeridional, almost a perfect immunity existing each evening.

"The symptoms being those of derangements of the gastric, pulmonary, and cerebral system, and from not being able to ascertain the existence, in most of the cases, of any cerebral, cardiac, pulmonary, pleural, or gastric structural disease, I was limited to one of two affections to account for them,—viz., disordered gastric secretion, or some neurosis of the gastro-pulmonary nervous group. I could never ascertain the existence of the former, and I attributed, therefore, the affection to some disorder of the latter.

"During the course of the cases, I found that the small quantity of food frequently indulged in, which was borne in such small quantities at first, was succeeded by a power of full repletion afterwards; the appetite became in many cases almost ravenous, and this led me to look for sugar in the urine. I found it, and subsequently found sugar in the cases of only recent origin. From palsy frequently succeeding hyperæsthesia of the nerves of sensation, and the vagus nerve being known to be chiefly an afferent nerve, I formed the conclusion that this disease, in its early stage, was one of the vagus nerve in some course of its tract, either centric, peripheral, or intermediate; of irritation in its early stages, of palsy succeeding that irritation, and designated it in my note-book 'sinking dyspepsia,' and treated it as I would have done neurosis of any other centripetal nerve, and with satisfactory results.

"Bernard's discovery of the formation of sugar in the liver, and its passage into the urine, on irritation of the origins of the vagus nerve, also of the influence of irritation of the centric portion of the divided vagus in the production of saccharine urine, as corroborated by Pavy, have, I consider, decided the accuracy of the diagnosis, and enable me to raise hyperæsthesia of the vagus from the position of merely an attendant symptom of disease to that of an idiopathic affection.

"The experiments of Magendie, Reid, Flourens-Legallois, and others —the cases recorded by Brodie, Romberg, James Johnson, Goolden, Gibb—the observations of Bernard, Barreswill, Lehmann, Schmidt, and Pavy, enable me to draw from sixty cases of this disease (of which twenty-two were unassociated with any other affection, and thirty-eight with various neuroses, cachæmic affections, &c.) the following conclusions, and which I can (I think safely) substantiate by cases to be detailed in this and subsequent papers:

"1. One of the functions of the vagus nerve is the communication to the sensorium of the condition of the stomach.

"2. That two forms of neurosis of this nerve exist—one of hyperæsthesia, the other of anæsthesia.

"3. Hyperæsthesia is attended by irritability of the stomach, increased feeling of necessity of respiration, altered reflex action of muscles of respiration, and of laryngeal function.

"4. Anæsthesia is attended by boulimia, and diminished necessity of respiration.

"5. Both forms obey the ordinary laws of diseased action of centripetal nerves, and are amenable to the rational treatment of the same.

"6. Both are attended by altered blood-formation, with its ordinary effects on the various organs of the body, and many by irradiated or reflex sensations (in the form of vertigo, tinnitus, deafness, neuralgia, dyspnœa, &c.), and reflected muscular actions, as epilepsy, catalepsy, various forms of spasm of bronchial tubes, intercostal muscles, hiccough (spasm of diaphragm), chlonic spasm of voluntary muscles, &c.

"7. Both forms by saccharine urine.

"8. That hyperæsthesia of the vagus induces disturbance chiefly of judgment, secondarily of memory, imagination, and the power of association of ideas.

"The urine, in all the cases of neurosis of the vagi, is passed frequently and in small quantities; its amount in the twenty-four hours is rarely two quarts, but is increased by indulgence in malt liquors—is alkaline when voided, of a clear pale, gooseberry-wine colour; no marked odour, excepting that of sugar; sp. gr. 1016 to 1030; acid fermentation not commencing under four or five days, when it becomes ropy and filled with vegetable growths; after this passes off the usual alkaline fermentation ensues. The urea is not increased in amount relatively to the other solid contents, but diminished in proportion to the water; uric acid is diminished, also the alcoholic extracts relatively to the whole contents of the urine; its chief characters are alkalinity and saccharine condition.

"In testing for sugar I have always removed the ammonia and rendered acid by hydrochloric acid, and used Trommer's test, or Barreswill's, and from time to time obtained an alcoholic extract, from which I have obtained the characteristic indication of sugar."

Then follow several illustrative cases, of which we give three:

In March, 1854, a woman, æt. 42, was struck over the left ear. Two days afterwards she felt extreme sinking sensation at the epigastrium; constant desire for food, the digestion of which produced flushing and swelling of the features, vertigo, tinnitus, great heat of the palms of the hands and the soles of the feet, and a sensation of formication over the whole of the body. These

were followed in three days by severe tic of the same side, engaging the frontal, orbital, malar, inferior maxillar and cervical regions. Four days after the accession of the tic I saw her, and ordered quinine and aconite internally. These seemed to be of no use; and from swelling occurring under the lobe of the ear, I suspended that treatment, ordered leeches to the swelling, and, on its subsidence, gave quinine and arsenic. The epigastric symptoms first, the facial and cervical subsequently, yielded, and she rapidly recovered. Has had tic neither before nor since the blow.

A woman, in 1853, applied to me for relief for shingles. Some months before I saw her she fell with the right side of the head against a chest, and received the blow somewhere behind the ear. She thought nothing of it; but in a few weeks found herself suffering from all the symptoms I have described attending hyperæsthesia of vagus, and to this succeeded the shingles of the same side. She had the periodicity of symptoms and the mental affection well marked. She was relieved rapidly, and subsequently cured by Argenti Nitratis, gr. ½; Opii, gr. ½; Ext. Anthemidis, gr. iv, ter die; Quinæ Disulphatis, gr. ij; Acid. Nitrici Diluti, ℥xx; Aquæ Fontanæ, ℥iss, ter die. In both cases the urine was saccharine, and possessed the other qualities described, all of which disappeared under the treatment.

In July, 1856, a young man, æt. 18, applied to me for relief from epilepsy. Two years ago he was struck by a stone opposite the superior posterior angle of the parietal bone of the right side; lost some blood, but no other immediate injurious result seemed to follow; but he noticed that soon after the blow he passed much more urine than he had been accustomed, and passed it unconsciously in the bed; also he had all the symptoms of hyperæsthesia of the vagus, which have gradually passed into those of anæsthesia. During the last eighteen months he has had epileptic fits at intervals of seven or fourteen days, generally on the Saturday. He has now an enlarged thyroid body encroaching on the carotid region; saccharine alkaline urine, and still the vagus affection with diurnal exacerbation. Under nitrate of silver, gr. ½; Indian hemp extract, gr. ½; Extract. Anthemidis, gr. iv; and quinine, his epigastric sensations are relieved, and the fits diminished in frequency, and the urine lessened in amount and in its saccharine character. He is still under treatment.

The treatment adopted by Dr. Shearman is intended—

1. To diminish the sensibility of the extremities of the afferent nerves engaged in the disease, the nitrate of silver, or the chloride (held in solution by ammonia), with opium, I have found the most expeditious; it rarely purges, and is far more useful than bismuth, prussic acid, and alkalies.

2. The exhibition of nervine tonics, quinine, iron, arsenic, zinc salts, when there has appeared to be only functional derangement; but, where any head affection has been suspected, it has been removed previously.

3. The exhibition of alkalies is of great value. There is no doubt now that sugar is an agent of great value in the metamorphosis of the system, independently of its being food for respiration, it is found in large quantity in the egg, and increases (not diminishes) during incubation; it bears an intimate connection with the formation of bile; also, it has some influence on the solution of carbonate and phosphate of lime in the blood; but, inasmuch as it is rapidly transformed before it reaches the lung, and transformed, too, almost immediately after its production in the liver, where one of the great blood-forming func-

tions is carried out; we see the necessity of not only restoring to the liver the function of forming a fermentable (in connection with albuminous matter) sugar, which is arrested during disease of the vagi, but of rendering the blood such as will allow of this fermentation. An acid state of the blood will not allow it, an alkaline facilitates it; and with this view an alkaline treatment should be conjoined with the special treatment of the neurotic affection. Liq. potassæ, in one-drachm doses, reduces the sugar in the urine, and renders the latter acid in this disease; it restores the blood, in all probability, to such a state as to transform the sugar so soon as the liver has regained its functions from alleviation of the affection of the vagi.

4. Nutrition of the body must be regained during convalescence, the value of fatty matter in this function is too well known to allow of its inutility after emaciation; besides, there is reason to consider that sugar is formed from two sources in the liver; partly from albuminous matter, partly from olein. The portal blood normally contains more olein than the hepatic, and fat in the solid residue of portal blood is as $3{\cdot}225\%$ to $1{\cdot}885\%$ in the hepatic; by the oxidation of glycerine and oleic acid we obtain the elements of grape sugar and cholic acid. Schmidt, Bernard, and Lehmann are strongly disposed to believe that the olein is one of the sources of both sugar and cholic acid. These are sufficient reasons for the exhibition of cod-oil; and I can speak very strongly in favour of its use in the treatment of neurosis of the vagus, and in cases of neuralgia depending on that disease.

Art. 25.—*Favorable cases of Hydrophobia.*

By Dr. J. Lewis Smith, Physician to the North-Western Dispensary.

(*New York Journal of Medicine*, March, 1856.)

"It is a matter of interest, and of practical importance," says Dr. J. L. Smith, in one of a series of admirable papers on hydrophobia to which we had occasion to refer in our last volume, "whether hydrophobia is necessarily fatal. That its occurrence may be prevented by a little treatment, when unequivocal prodromic symptoms have appeared, is clearly ascertained. In the records already examined by us, instances of this are mentioned, and occasionally the threatened attack was more than once averted.

"Hear, also, the remarks of that eminent physician, and profound medical philosopher, Dr. Elliotson, on this point ('Lond. Lanc.,' May, 1829): 'Usually, I believe, (he speaks of the premonitory stage) there are symptoms of weariness, general indisposition, dizziness, chills, and flushes; sometimes a pain has been felt in the bitten part. I think it very possible, from an occurrence which happened in my own practice, that these symptoms may go no further; that the disease, if I may so speak, may go off. Two little girls, standing at their father's door, were bitten by the same dog; a dog passing, snapped at both of them, and bit them in the face. She who was

bitten the second, became hydrophobic, and died. The other, at exactly the same time, experienced exactly the same premonitory symptoms as her sister—heaviness and general indisposition,—but they all went off.

"'If, then, an attack of hydrophobia may be prevented after its premonitory stage has commenced, may not the disease itself, though fully established in some instances, be thrown off, and the patient be saved?

"'The observations of Mr. Youatt, upon the dog, have shown that, in this animal, hydrophobia may occasionally have a favorable termination. In commenting on the second case in table (No. III) he says, speaking of one of his canine patients: "The dog was suspected to have been bitten. It was in a manner certain that it had been bitten, but the wounded part could not be detected, and he was not operated upon. The disease approached; it established itself. There was the perversion of temper; the suspicious scowl; the eager watching of imaginary objects; the darting at some phantom of the imagination; the depraved appetite; and the characteristic howl. The malady pursued its regular course during more than twenty-four hours, and then came a gradual calm—the dog quieted down to his usual appearance and habits—he became well. * * * Another and another case succeeded. Once in a hundred times, or more, the constitutional affection admitted not of a doubt * * and the patient got well.'"

"The fact that hydrophobia may terminate favorably in the dog, does not furnish certain proof that it may likewise in the human species; but certainly it is an argument of great weight, in support of such a doctrine. The belief is pretty general, that canine madness is uniformly fatal in man. Instances of recovery are reported in the journals, but they have attracted little attention, from the fact, that other diseases possessing a strongly marked nervous element may be mistaken for true rabies. No doubt there has frequently been an entire misapprehension of the nature of the affection, and several records in my collection confirm this opinion; but the most cautious statistician, it seems to me, must admit that in a part, at least, of the following cases, genuine hydrophobia was present."

Favorable Cases.

No.	Sex.	Age.	Part Bitten.	Incubation.	Duration of Prod.	Duration of Disease.	Treatment.	Authority.
1	M.	Ad.	Hand.	3 m.	6 d.	...	Purgatives, stimulants, &c.	Wm. Grant, G. Doane. *Med. Gaz.*, July 10, 1830.
2	F.	35	Finger.	8 d.	5 d.	...	Purgatives, arsenic, incision.	T. Tompkin, E. G. Varenue, *Lon. Lan.*, Aug., 1835.
3	M.	Ad.	Arm.	12 to 14 m.	2 w.	...	Purgatives, leeches, opiates.	Dr. Du Heaume, *Med. Gaz.*, Dec., 1837.
4	„	17	„	3 w.	Several d.	...	Purgatives, Hyd. Chlor. Lib.,opiates.	Dr. Hooper, *Medical Times*, May 17, 1847.
5	„	...	Thumb	12 d.	2 d.	...	Hyd. Chlor. Lib., incision.	W. F. Haines, *Lond. Lan.*, 1847.
6	F.	30	Wrist.	About 3 m.	About 3 w.	...	Opiates, anæsthetics, &c.	Prof. Jackson, *Amer. Journ.*, 1849.

"An abstract of the histories and symptoms of these six cases will enable us to judge whether the disease was really hydrophobia."

Case 1.—The wound which was inflicted by a dog, whose condition is not given, healed after the lapse of several weeks.

November 14th.—About three months subsequently to the reception of the bite, the patient was seized with headache and rigors, which were relieved by a purgative. On the 20th of the same month, the presence of water distressed him, and attempts to drink caused the characteristic spasms of the neck. The cicatrix had an inflammatory appearance, and he was seen to rub it. He was timid and distrustful, and a viscid secretion began to form in his mouth and throat.

This condition continued till the 21st, when he was placed in a warm bath, and all these untoward symptoms vanished.

The amendment lasted till the evening of the 22d, when he again became restless, and, on the 23d, relapse was complete. The dread of water was so great, that the bath was not repeated; but 280 drops of laudanum were administered. He slept six hours, and awoke refreshed and free from spasms. On the evening of the 25th another relapse occurred, attended by a flatulent condition of the bowels.

The records do not state how long the spasms continued; but the patient grew progressively weaker, so as "to require brandy and broths plentifully." On December 14th he was nearly insensible; pulse 130; extremities cold, and hiccough constant. He was fed with chicken broth, jellies, and stimulants; and, contrary to all expectation, a gradual improvement followed, and on the 8th of January he was able to leave the place.

Case 2.—Bitten by a favorite dog, which was killed in a week, with

the salivary glands enlarged. The wound was trifling, and healed in three days.

June 30th, eight days after the injury was received, she was suddenly seized with cephalalgia and dimness of vision. These symptoms were momentary; but they recurred at intervals for several days, accompanied by an uneasy sensation in the neighbourhood of the bitten finger.

July 4th.—When drawing beer from a cask, she became giddy; but recovered, on stopping the cock. The following day her eyes were bright, prominent, and intolerant of light, and she complained of pain in the left side.

6th.—Constipation; aversion to food and drinks, and each attempt to take them followed by a convulsive fit.

7th.—Intolerance of light, and aversion to liquids increased; complains of pain extending up the arm from the bitten finger; pulse weak and fluttering, and neck tumid; the paroxysms last about five minutes.

8th.—One of the cicatrices slightly inflamed, and the symptoms of yesterday continue. She has been treated with aperients and the liquor arsenicalis. Treatment to-day,—excision of the cicatrices, and the application of veratrine ointment over the neck and arms.

9th.—Has improved since the excision; feels less pain in the throat, and none in the arm, and has had only one paroxysm.

15th.—Continues improving, but deglutition difficult; gums swelling, probably from the arsenic which she has continued taking.

August 10th.—Has had no return of the complaint. Mr. Youatt commented at length in the 'Lancet,' on the above case, entertaining, apparently, no doubt of its genuineness.

Case 3.—Was bitten by his own Newfoundland dog, which two years subsequently, when the records were published, was alive and well. It inflicted the bite from provocation, and did not show, before or afterwards, any suspicious symptoms.

The cicatrix, before the occurrence of hydrophobia, had occasionally been painful, and at the inception of the disease it presented a reddish appearance.

After two weeks of anxiety and melancholy, he was taken, February 11th, 1837, with attacks of convulsive respiration.

12th.—Respiration as yesterday; face flushed; pulse quick; bowels flatulent; pupils dilated but contractile; rational; quantity of saliva increased. Twenty-four leeches were applied to his temples; blisters to the calves of his legs, and purgative enemata administered.

9 p.m.—Much excited by the vesication; countenance anxious, and eyes brilliant. Has spasms when water is offered.

13th.—Symptoms as before. The noise of a carriage in the street, the touch of an orange to his lips, and pressure upon the cicatrix, occasion paroxysms.

14th.—Pulseless, insensible, and extremities cold. Had no spasms during the night, but at twelve o'clock to-day a paroxysm occurred, lasting two hours. After this he gradually convalesced. During the latter part of his sickness he took opiates, stimulants, and mercurials.

Case 4.—The wound was severe, and inflicted by a dog known to be rabid.

The disease was ushered in by restlessness and melancholy, lasting several days, and when fully developed, the paroxysms were severe. The sound of water, the least noise in the room, opening a door, increase or diminution of light, and the sight of a glass vessel, caused either convulsions or great

distress. He complained of thirst, of a constriction across his chest, and of itching in the cicatrix. He was ordered—Tr. Camph., and Tr. Opii, āā, 3ij, to be repeated in half an hour, and a mercurial.

On the following day he was better. The cicatrix had given way and was discharging. There was no delirium; the paroxysms were less frequent and severe; and he slept four hours in the morning.

After this he gradually convalesced. He was salivated, but not till the improvement had commenced. A year subsequently he was seen by Dr. H. in his usual health.

Case 5.—Bitten slightly in September, 1846, by a dog which had been four or five weeks in a singular state, and at the time the bite was inflicted, showed symptoms of rabies, viz., spasms, dread of water, and increase of saliva.

On the twelfth day after the injury, the wounded part became hot and prickly. The day following it was better, but the third day it became worse again, and headache, thirst, and restlessness commenced. He now complained of pain in his throat; his deglutition was difficult; and five or six times hourly, the characteristic spasms took place.

On the nineteenth day after the infliction of the bite, convalescence was established. The treatment consisted in scarifying and poulticing the bitten part, and in mercurialization.

Case 6.—The wounds received by this patient were slight, and inflicted by a strange dog, running in the street.

After three months the cicatrices became red, slightly tumefied, and painful. One festered and discharged a few drops of greenish matter, and then healed, giving no further trouble. The other remained hard and painful, and pain extended from it up the arm to the shoulder.

This condition continued a few days, when one morning, as she was drinking, she experienced a sudden shuddering sensation. The following evening the same sensation occurred from putting her hand in water, and violent spasms of the throat, with a sense of suffocation on attempting to drink; currents of air produced no unpleasant effects; the fauces were dry, and she retained her senses perfectly. Counter-irritation and antispasmodics were prescribed.

On the following day (October 29th) there was an apparent amendment. She had had no spasms since the previous day, and had passed a quiet night. She took water readily, and her pulse was natural; but the affected arm had lost its sensibility, and there was deep-seated pain in the course of its nerves.

She was ordered antispasmodics with rhubarb and mercury, but the first dose brought on violent spasms threatening suffocation. The paroxysms now recurred frequently, produced by trifling causes, as the waving of the hand, and sometimes occurring spontaneously. Chloroform was administered, and the red and tumid cicatrix excised; but the spasms continued, and the sight of a silver spoon, and the brushing away of flies, were sufficient to induce them.

The record for October 31st states that she had passed a comfortable night, and that the wound was discharging freely.

From this time she gradually convalesced. Cicatrization had taken place, and the pain had ceased in the arm by the second week in December, but the shoulder and axilla remained tender, and occasionally painful till the 1st of January, when her health was permanently restored.

Dr. Smith adds, in another place—

"The striking similarity, we may say identity, of symptoms in the

above cases, with those which we have seen to be characteristic of hydrophobia, leave little doubt, that these patients suffered that appalling disease. This opinion receives confirmation from the fact that, at least four of the dogs which inflicted the bites were at the time, or soon after, either rabid, or in such a condition as to excite the strongest suspicion of rabies.

"But the most convincing proof that the above were genuine cases lies, perhaps, in the fact, that in all six, the bitten part was the seat and source of some unusual sensation, or that it presented some unusual appearance, at or before the commencement of the disease. We may then consider it settled, that hydrophobia, though so commonly fatal that one affected with it can indulge no reasonable hope of recovering, does, in rare instances, have a favorable termination."

Art. 26.—*Inhalations of Chloroform in the treatment of Chorea.* By Dr. Gery.

(*Bull. Gén. de Thérap.*, March, 1855.)

On several occasions lately, chloroform inhalations have been used at the Hôpital des Enfans, in Paris, in obstinate and unmanageable cases of chorea, and the effect has always been to quiet the movements, and procure sleep for a time varying from 10 to 30 minutes; and this without producing any injurious consequences. In this way time was gained for the administration of food and appropriate remedies. The quantity inhaled varied from $2\frac{1}{2}$ to 5 drachms by weight. Of course, the usual precautions were taken in conducting the inhalation.

Art. 27.—*On "Intermittent Rheumatic Contractions."* By M. Trousseau.

(*Gaz. des Hôpitaux*, No. 72, 1856.)

Under this name, M. Trousseau describes certain nervous symptoms of more or less gravity, and resembling more or less intimately, as the case may be, hysteria, epilepsy, eclampsia, or catalepsy; unaccompanied by any obvious disease of the brain or cord; and occurring most frequently in nursing women. In some of these cases, the blood presented a buffy coat, as in rheumatism, or symptoms of rheumatism alternated with the nervous symptoms. But there appears to be no very good reason why M. Trousseau should have applied the term "rheumatic" to the nervous symptoms. Indeed, there appears to be no good reason for discarding the good old friendly term *hysteric*.

ART. 28.—*On the treatment of Epilepsy.* By Dr. JOHN OSBORNE, Physician to Mercer's Hospital.

(*Dublin Quarterly Journal of Medicine*, Nov. 1856.)

In this paper, Dr. Osborne records the result of his hospital experience in the treatment of epilepsy, an experience embracing twenty-six cases, and extending over twenty-seven years. Dr. Osborne's theory is, that sleep and epilepsy are very closely allied, and that the cue for the treatment of epilepsy is to be taken from the right knowledge of the cause of sleep. Now sleep, in his opinion—

"Is produced by turgescence of the choroid bodies, they being essentially erectile structures, in the lateral and third and fourth ventricles of the brain, compressing the origin of the spinal marrow and of the nerves proceeding from that region; whilst at the same time, by the occupation of so much of the cavity of the cranium, the quantity of blood circulating at the surface of the hemispheres is proportionately diminished, and thus a double impediment is offered to the perception of external objects, and communication with the external world is cut off during the portions of time required for nutrition and repair of the nervous centres."

The object of treatment is to lessen this erectile turgor, and in order to this, the tumultuous action of the heart is to be quieted by digitalis, and the distended capillaries stimulated to contraction by cantharides. One formula is the following:

"Infusion of digitalis, and water of acetate of ammonia, of each two ounces; pennyroyal water, four ounces; mix. One ounce to be taken mid-day, evening, and night; and the tincture of cantharides to be added, commencing with five drops, and increasing by one drop each dose. When it appeared desirable to give digitalis in a lesser and cantharides in a greater proportion, then the following was used: —Infusion of digitalis, three ounces and a half; tincture of cantharides, half an ounce; mix. Forty minims to be given in milk thrice daily, and progressively increased."

The results of this treatment, in Dr. Osborne's opinion, were very successful.

ART. 29.—*On Lactate of Zinc in Epilepsy.* By M. HERPIN.

(*Bull. Gén. de Thérap.*, Nov., 1855; and *Méd. Chir. Rév.*, July, 1856.)

M. Herpin points out the fallacy of deductions from cases treated *en masse* by any remedy, without classifying the cases, and taking the prognosis into consideration. He divides cases of epilepsy into three groups. 1. Where the prognosis is *favorable*.. This embraces cases in which there have been less than 100 attacks. 2. *Little favorable* cases, where there have been from 100 to 500 attacks. 3. *Unfavorable* cases, where there have been above 500 attacks. The duration of the affection, together with the age and sex of the subject, also influence the prognosis. All things being equal in respect to the number of

fits, the most recent cases are the most favorable. Under five months' duration, the chances of recovery are twice as great as from five months to a year. After ten years, success is rare. Of all ages, old age is the most favorable; then youth and infancy; and least of all, adult age. In M. Herpin's hands there have been twice as many failures with males as with females. Adult men are most unfavorable subjects. To apply this sort of division to the cases treated by lactate of zinc:—of 41 epileptics, the treatment was only sufficiently advanced in 35 for any decision as to its effect being arrived at. Of these 35, 15 were favorable cases, 12 little favorable, and 8 unfavorable. Of the 8 unfavorables, 2 have improved to an extent which militates strongly in favour of the remedy. Of the 12 little favorable cases, in 2 children, aged respectively eight years and twenty-one months, the fits were suppressed: and a remarkable amelioration took place in one man. Of the 15 favorable cases, 4, in which various other remedies had failed, were uninfluenced by the lactate; one of these had suffered ninety attacks in fifteen years and a half; a second, aged forty-four years, had symptoms of commencing general paralysis; a third, aged four or five years, had a hydrocephalic head; and a fourth, which had lasted three years and a half, was otherwise favorable. In 6 of the remaining 11, the attacks were suppressed; and of the 5 others, 3 have had the intervals so much prolonged as to afford hope of complete cure on continuance of the remedy; the remaining 2 were amended. The remedy was given for a period of from five or six to twelve months.

Art. 30.—*On the rational treatment of Epilepsy.* By Dr. Russell Reynolds.

(*Lancet*, July 5, 1856.)

In this paper, which was read before the Medical Society of London, May 24, 1856, the rational treatment of epilepsy is distinguished from two other kinds—viz., the empirical, or non-rational, and the *à priori*, or falsely rational. It consists of the application deductively to particular cases, of inductively acquired knowledge of the disease in general, and of remedies in general. The measure of success attending treatment is, in the long run, the measure of its rationality; for such application to particular cases is the experiment by which we may test the correctness or incorrectness of our interpretation of phenomena, both of disease and medication. This is, however, true only when we have attained to an accurate measure of success. The so-called accidental cures are not accidental, but are dependent upon undiscovered laws; neither are they exceptional, for there are no exceptions to natural laws; but there are few laws so accurately comprehended in the sciences of pathology and therapeutics, that we can announce them without the aid of per centages, averages, and means. The latter are, then, numerical expressions, not of the whole truth, but of such fractions of the truth as we are for the time being able to perceive. These numerical expressions are means which we may employ in the search after truth; they are not

the end of scientific investigation. It is not the object of this paper to present numerical results, but to indicate certain broad, general truths, ascertained with regard to epilepsy and epileptics, which may serve as the guides towards a rational employment of those agencies which lie within our reach. There are three steps in the process by which we arrive at a rational treatment of a disease. They are—1st, the appreciation, so far as possible, of the real nature of that disease: 2dly, the recognition of the general effects of different courses or modes of treatment; and 3dly, the application of particular remedies to particular cases. Upon each of these steps it is proposed to offer comments.

I. The appreciation of the real nature of the disease in question. It is not intended to assert that we have arrived at a knowledge of the ultimate essence of the malady: but we may recognise its phenomena; and not leaving these as an unsifted heap of pathological facts, we may, by their partial interpretation, reduce them to their "lowest terms." In epilepsy, the three modes or phases of life present some more or less notable modifications. Thus, there are symptoms referable to the mind, to the motor apparatus, and to organic life, and we may therefore class them into mental, animal, and vegetal. Regarding the epileptic not merely during the accession of a fit, but in the inter-paroxysmal period, we may state the prominent features of his disease to be the following:—1st, deficiency of will; 2dly, excessive susceptibility to the induction of involuntary movements; 3dly, an altered condition of the organic processes.

1. Deficiency of will, exhibiting itself in the absence of due control over thought, emotion, and simple sensation, and reflective movement. As it has been argued at another time,* this diminution of will produces, phenomenally, loss of both apprehension and memory, alternating or co-existing with a vague, wandering condition of mind, which, under accidental circumstances of excitement, may display itself in delirium. The emotions are easily disturbed; they exert an undue influence upon the inner and outer life; their expression is uncontrolled; delusive ideas are not unfrequently entertained; sudden impressions upon the senses startle the patient, unnerve him, and make him tremble; he is not master of himself; and all these morbid conditions are but illustrations of a deficiency of will which reaches its maximum,—viz., the complete extinction of volition, in the unconsciousness of the attack.

2. Excessive susceptibility to the induction of involuntary movement is evident during the attacks from the spasms which are then present; but during the intervals of seizure there are feebler but not less characteristic indications of the same tendency. Muscular agitation, in the form of tremor, choreic spasm, or choreiform movements, occurs in 73 per cent.; and this exaggeration of motor activity we may confidently refer, as Dr. Marshall Hall long since pointed out, to the spinal centre. I say "confidently," for there is no evidence of increased muscular irritability, on the one hand; nor, on the other, can we affirm, in the greater number of cases, the existence of any

* On the Inter-paroxysmal Condition of Epileptics (*vide* 'Abstract,' XXII, p. 73).

undue irritation. As examined by percussion and the galvanic current, the muscular irritability of epileptics is constantly below the average of health; and although we may often refer the commencement of attacks and their recurrence to indigestion, loaded intestines, disturbed emotions, and so forth, these irritations ought not to be considered the efficient causes of epilepsy or epileptic attacks, since they neither exceed in degree nor differ in kind from the irritations to which hundreds and thousands are daily exposed without suffering any such catastrophe as an epileptic fit. Failing, then, to find the source of this excessive motility in either the muscles themselves or in the nature of the irritation to which afferent nerves may be exposed, we must, *pro tempore* at all events, refer it to that which lies *between* the stimulus and the contraction—viz., the spinal centre; and in this centre we recognise an undue readiness or susceptibility of reflective action.

3. Altered or morbid conditions of the organic processes are found in many epileptics; but it may be most confidently asserted, that there has not yet been pointed out any one condition which necessarily exists. Frequently there is organic debility; but this, so far as my experience extends, is by no means invariably present. Amongst seventy-one cases which were analysed for the paper already referred to, there were no discoverable signs of debility in twenty-nine; it was notably marked in eleven only. The organic conditions vary indefinitely; but there is this, however, which is common to them all—viz., the existence of a *change* from the previous condition of the patient, or from that of health. The existence of such changes as those attendant upon dentition, the commencement of puberty, or pregnancy, or of such as may belong to the condition of general anæmia and the like, cannot but exert a perturbing influence upon the nervous centres, which are placed in such intimate relation with the entire organism. The nature of such perturbation we may not understand, but we cannot question its existence, or doubt the importance of its treatment. But when there are structural lesions in the nervous centres themselves, or in their appendages, such as tumours of the brain, or chronic meningitis,—and when there are positively morbid blood conditions, such as that of urinæmia induced by Bright's disease, &c., &c.,—we do not, in my opinion, have to deal with epilepsy, but with epileptiform or allied convulsions, dependent upon other and recognisable diseases.

II. The second step in arriving at a rational treatment of epileptics, is taken by a recognition of the effects of different therapeutic agents, considered in their general application to the disease in question. If the interpretation already given of the prominent features of epilepsy be correct, there are three classes of objects to be attained. These are—1, the education or increase of volitional control; 2, the diminution of excessive susceptibility in the spinal centre; and 3, the correction or counteraction of what may be morbid in the organic system.

1. The education or increase of volitional control is to be attempted by two classes of means, having relation to the circumstances which have either caused, or served to maintain, the deficiency of will. The

former class includes all those means which should educe that self-control which, through hereditary, constitutional, hygienic, or social conditions, has undergone but an imperfect development; the latter embraces those agencies or modes of treatment which should screen the patient from such excitement or perturbation as may have succeeded in overmastering the will. If the mind and will are not duly exercised, they will waste; if they are overtaxed or overstrained, they will wear. We have to avoid these two extremes, enjoining judicious discipline and healthy educational exercise for the child who has been too fondly tended, and allowed to pass its time in indulged idleness at home; and enforcing absolute rest, or even entire seclusion from the worry of the stock exchange or the anxiety of professional life, when these have injuriously absorbed the thought and sapped the mental strength of the individual.

2. The diminution of excessive susceptibility in the spinal centre requires for its attainment two kinds of treatment: viz., the scrupulous avoidance of all sources of undue irritation, and the exhibition of such agents as shall diminish the amount of irritability already existing, such as hyoscyamus, and allied medicines.

3. The removal or correction of those morbid conditions which exist in the organic system cannot be too carefully or perseveringly attempted. For the attainment of this object, the guides are those which we have in regard of all other diseases, and they need no further notice here.

III. The application of particular remedies to particular cases forms the third step in the process of arriving at a rational treatment of epilepsy. In order to gain this end, we may divide epileptics into three classes, and the recognition of a particular case as belonging to one or another of these groups will mainly guide us in the direction of treatment. The three classes may be separated from each other by the predominance, in those individuals who compose them, of one or another of the three main features of the disease, as it exists during the inter-paroxysmal period. Thus, in the first, the mind is predominantly at fault; in the second, the most characteristic symptoms are those of exalted muscular activity; and in the third, there are the signs of an abnormal organic condition. Cases of epilepsy require treatment for each of the three groups of symptoms, but some require especial attention in one direction, and others necessitate a different kind of management.

In illustration of these principles, the author read the records of nine cases of epilepsy, three belonging to each of these groups.

Art. 31.—*On Tetanus in India.* By Mr. Waring.

(*Indian Annals of Medical Science*, April, 1856.)

We take the following facts and remarks from the same 'Notes on the Diseases of India,' to which we have already referred on more than one occasion in the present volume:—

"Frequent as this disease (tetanus) is represented to be in Demerara, Trinidad, St. Domingo and in some other localities in the

West Indies, no comparison, I think, can be instituted between its frequency in these places and in some of the towns of India, Bombay especially, as will be seen by a perusal of the following statement:

Showing the Deaths from Tetanus in the Town of Bombay, for a period of three years, 1851-52-53.

Year.	Total Deaths.	Deaths from Tetanus.	Proportion.
1851	14,724	332	1 death from tetanus to 44 from all causes.
1852	13,763	341	1 „ „ 40 „ „
1853	14,164	239	1 „ „ 59 „ „
	42,651	912	1 „ „ 46 „ „

"Large as this number is, both absolutely and comparatively, it is still below the mark, as under the heading of 'Total Deaths' are included 'still births,' whilst under that of tetanus is excluded that puerperal form of the disease, which, we shall subsequently see, is both frequent and fatal. We have no means of comparing the proportion of tetanic deaths in Calcutta and Madras with those of Bombay, but if an opinion may be formed from hospital returns, we are justified in saying that the disease is not of so frequent occurrence in Calcutta as it is in Bombay- Thus in the Calcutta General Hospital,* during five years (1847-51), only 56 were admissions with tetanus, whilst at the Jamsetjee Jejeebhoy Hospital† in Bombay, during a period of seven years (1845-51), the admissions under this heading amounted to 195.

"Compared with more temperate climates, the ratio of deaths from tetanus appear still more striking; thus we find the following proportions to exist:

Place.	Period.	Total Deaths.	Deaths from Tetanus.	Proportion.
London . .	1850-3-4	224,515	73	1 in 3075
Ireland . . .	1831-51	1,187,374	238	1 in 4987
New York . .	1819-34	83,783	112	1 in 748
Bombay . .	1851-3	42,651	912	1 in 46

"The proportion existing in Bombay, taken in this light, cannot but be regarded as very formidable.

* Dr. Jackson, 'Indian Annals of Med. Science,' No. 1, 1853, p. 58.
† Mr. Peet, 'Bombay Med. Trans.,' No. 1, N. S., 1853, p. 1.

"*Influence of Seasons.*—In seeking to ascertain the cause of so prevalent a disease, one of the first questions which presents itself to the mind is, what were the atmospherical and meteorological conditions of the locality during the period of its prevalence. Fortunately we have here good data to judge, from which we here subjoin :

Month.	1851.	1852.	1853.	Total.	
February . .	28	32	14	74	
March . . .	26	35	24	85	242 or 26·5 per cent.
April . . .	26	36	21	83	
May . . .	28	22	25	75	
June . . .	21	34	21	76	220 or 24·1 per cent.
July . . .	27	21	21	69	
August . . .	29	24	17	70	
September .	31	28	18	77	226 or 24·9 per cent.
October . .	30	24	25	79	
November . .	29	35	22	86	
December . .	39	29	14	82	224 or 24·8 per cent.
January . .	18	21	17	50	
	332	341	239	912	

"This table, I think, satisfactorily shows that seasons *per see,* exercise no influence on the mortality of this disease, each quarter presenting us with very nearly the same proportions of deaths from this cause. A slight increase is observable in the month preceding the rains (May), but nothing sufficiently marked to allow us to place any stress upon it. For some other cause therefore must we look ;—it cannot well be lowness of site, as both Madras and Calcutta are, equally with Bombay, very slightly elevated above sea-level. So likewise it cannot be poverty, wretchedness, or want of drainage, otherwise Calcutta and Madras would produce quite as many cases as Bombay. Its cause yet remains to be discovered."

Art. 32.—*On the Characteristics of Strychnia Tetanus.* By Dr. R. Adams, Surgeon to the Richmond Hospital.

(*Medical Times and Gazette*, Aug. 16, 1856.)

In a paper containing an account of a case of suicidal poisoning by strychnia, Dr. Adams draws the following comparison between ordinary tetanus and strychnia tetanus :

1. Strychnia tetanus resembles ordinary tetanus in its spasms, particularly when they assume, as they frequently do, the form of opisthotonos.

2. A rigid condition of the muscles exists in both cases, not only during the actual paroxysms, but also during the intervals between them.

3. Strychnia tetanus, in its progress to a fatal result, is much more rapid in its course than ordinary tetanus.

4. The commencement of this last is silent, and the expression of the countenance is peculiar and characteristic.

5. The beginning of the former is announced by loud and repeated screams and moanings.

6. The hands in strychnia tetanus are early and severely affected; in ordinary tetanus the hands are the parts of all others the last and least affected.

Art. 33.—*A case of Writer's Cramp, cured by Electricity.* By M. Seccamini.

(*Gaz. Méd. de Italiana* (*Lombardia*); and *Gaz. Méd. de Paris*, March 15, 1856.)

The patient in this case was a lawyer's clerk, æt. 40, well in other respects, who had suffered for some time from a paralysed condition of the right hand. When he attempted to write, the fingers grasped the pen convulsively, and writing was out of his power. The case is not given circumstantially, and we are not told how long these symptoms had continued, but enough is said to show that they were those of ordinary writer's cramp, which had been brought on by an excessively prolonged use of the pen, and that there was no disease in the great nervous centres or elsewhere. Examining the arm by means of the electrical apparatus of Duchenne, the sensibility was found to be in a perfectly natural state, but not the motility. The flexors of the fingers and the adductors of the arm contracted normally; the pronator-teres contracted imperfeetly; and the extensors of the arm contracted very slightly. The electricity was applied by means of two moistened sponges, and the paralysed muscles were excited by acting powerfully upon their antagonists, after the plan laid down by M. Duchenne; and the result was that the use of the hand was perfectly restored, after fifteen sittings of about half an hour each.

Art. 34.—*Case of Spinal Apoplexy.* By Dr. Isaac F. Porter, of New London, Connecticut.

(*American Journal of Medical Science*, July, 1856.)

Cases of this nature, or even of spinal congestion, terminating fatally, are met with so rarely, that any new case is necessarily possessed of considerable interest. Dr. Porter's diagnosis, it is true, is not confirmed by a post-mortem examination, but there can be no reasonable doubt as to its correctness.

Case.—A talented and opulent merchant, largely employed in commerce, was busily engaged from early dawn until afternoon of an intensely hot day in September last, in getting to sea one of his ships. He was 40 years of age, and his general health good, although there is in the family a proclivity to plethoric, congestive, and paralytic diseases. He had drank freely, though prudently, of cold liquids, and, after the ship had sailed, went into a barber's shop, about 5 o'clock p.m., and had his head "shampooed," as he had occa-

sionally done before. Heated and exhausted as he was, the irrigation of the water, as it flowed over the back of his head and neck, was, for a time, very grateful, though it had been standing, as was said, the most of the day in the room. He soon, however, became chilly, and was seized with a violent pain in the lower part of his back, and, on attempting to leave the shop, became partially paralysed; and he was obliged, soon after, to stand motionless in the street for some minutes. The powerlessness then seemed gradually to leave him, and he was able to walk, though with difficulty, his gait being noticeably changed, as observed by his friends. About half an hour after, he was again seized with pain in the back and numbness, and loss of power in the lower limbs, attended with a very severe chill; yet the palsy was not severe enough to prevent his walking home at 6 p.m., when he went immediately to bed. By advice of friends, he took hot stimulant drinks and teas, hot pediluvia, and had bottles of hot water placed around him. He soon emerged from the chill, and moderate reaction came on, but complained greatly of pain in the back, and numbness of his extremities. A little before 10 o'clock p.m. I saw him—intellect perfect; countenance anxious, though disposed to think lightly of his disease, saying he should be at his store in the morning; shaking with the cold at the slightest motion of the bedclothes; gentle perspiration, but the hands cold and clammy when exposed to the air. The pain in the back, and numbness, still continued, and new distress, like colic, had lately manifested itself in the abdomen, with a most urgent desire for a passage from the bowels. A free motion had occurred just before the attack, and, previous to my arrival, he had endeavoured to use the close-stool, but immediately on rising, with help, into the upright position, he had fainted. Insisting on making a second attempt, he arose with help, but rather *fell* than *sat* in the chair. Immediately his head dropped on his chest, his breathing became stertorous, and the muscles began to show convulsive action. Contrary to my express command, he afterwards made another attempt, with the same result, and on coming to himself he said: "I am truly in a critical situation, and will make no further effort." There was desire to pass water, but it was by no means so urgent, and none passed him during life. From 11 o'clock p.m. of Tuesday night until 4 p.m. of the following day, when he expired, he maintained the horizontal position, except as he vomited twice in the night, and slightly turned from side to side, with restlessness and jactitation from pain in the bowels and back. His pulse, as I entered the room, was a mere thread, contrasting strongly with his flushed and congested countenance. The slighest pressure annihilated it, and after effort on his part it was entirely gone.

The aspect of the case, at the outset, was almost hopeless, and the symptoms progressed with rapid strides towards a fatal termination. About 4 o'clock in the morning his acute distress left him; the pulse slightly rose in volume and power under the use of stimulants and nourishment, and by crowding them it was for a short time maintained, but soon either the stomach rejected them, or they ceased to have anything more than a momentary influence. He soon after became somnolent, though he was aroused without difficulty until within an hour or two of his death, and always showed a good share of intelligence, and answered questions promptly and properly. While apparently asleep, he occasionally uttered incoherent expressions, but on being aroused, was perfectly conscious. Showing how naturally and spontaneously our thoughts flow in their accustomed channels, shortly before he expired he said, in a firm voice, "I believe that everything is aboard," which were his last words. "Even in our ashes, live their wonted fires."

Soon after dissolution, remarkable evidence of venous engorgement pre-

sented itself. The entire surface of the body appeared as if deeply ecchymosed or cyanosed. The colour was uniform and permanent.

There were unusual reasons for preserving the body as long as possible, and the weather was very hot and oppressive. Much as a post-mortem examination was desired, yet these reasons, and the mechanical difficulties to be overcome being so great in exposing the vertebral canal, and the want of suitable instruments, all conspired to render it impracticable.

The treatment in this case was directed, at the outset, to obviating the alarming prostration. Ignorant, at that time, of the cold douche, the chills in the barber's shop, and the subsequent loss of muscular power, the debility was referred to some unknown *functional* derangement, and alcoholic drinks, sulph. ether, and aromat. spts. ammo. were freely used, with animal broths; and externally, fomentations were applied to the abdomen, and Granville's lotion, sinapisms, and a blister to the back. Leeches were proposed to the medical gentlemen in consultation, but declined on account of the adynamia. The influence of medication was momentary and trifling.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 35.—*The influence of Sea Voyages and Warm Climates on the progress of Pulmonary Consumption.* By M. JULES ROCHARD.

(*Edinburgh Medical Journal*, Oct., 1856.)

The following conclusions are arrived at on this subject by M. Rochard, after a most elaborate investigation of the subject. His paper is published in the 'Memoirs of the Academy of Medicine of Paris,' for 1856, and is an "ouvrage couronné dans la séance publique du 11 Décembre, 1855."

1. Sea voyages accelerate the progress of pulmonary tuberculization, much more frequently than they retard it.

2. This disease, far from being rare among marines, is, on the contrary, much more common among them than in the land army. It prevails with equal intensity in the hospitals of our ports, in our stations, in our fleets. The "officiers de marine," the physicians, the commissaries, all who are afloat, in a word, are subject to this general law.

3. With rare exceptions, which must be admitted, considering some facts recorded by men of credit, phthisis advances on board ship with more rapidity than ashore.

4. The naval profession should be interdicted, in the most decided manner, to all youths who appear to be menaced with phthisis.

5. The consumptive can get no advantage from sea voyages, except they be on board under certain special hygienic conditions, and change climate and locality according to the seasons and atmospheric vicissitudes; things which cannot be realised on board of ships with a mission to fulfil. Journeys by land, and prolonged stay in a well-selected country, allow of all the same objects being attained, with much less expense and danger.

6. Warm countries, taken as a whole, exercise an injurious in-

fluence on the progress of pulmonary tuberculization, and accelerate its course.

7. Those situated in the torrid zone are specially injurious, and stay there should be formally interdicted to the phthisical. The opinions of the physicians-in-chief of our colonies, and of the English colonies, comparative statistics of colonial and of European regiments in the two sets of countries, the frequency of phthisis in our tropical stations, and in those of England in the same latitudes, and a multitude of special observations, demonstrate this completely, and the examination of each particular locality confirms it.

8. Most hot climates, situated outside of the torrid zone, are equally injurious to the tuberculous. Some points on the confines of this region, and concentrated in a narrow space, are exceptions. This is owing to local conditions. To sojourn in them protects the phthisical from acute affections of the respiratory passages which accelerate the progress of tuberculization, permits a mode of life better adapted to keeping up the general strength, prolongs existence sometimes, and contributes always to a more easy termination of the same.

9. It is in the first stage of phthisis that there is any hope from emigration, and any reason to expect good results from it.

The localities to be recommended to the consumptive M. Rochard divides into four series, according to their respective advantages:

1. Madeira. 2. Hyères, Venice, and Pisa. 3. Rome, Nice, of which the reputation is constantly decreasing. 4. Menton, Villa Franche, Bay of Spezzia, Lake of Como, the Balearic Isles, the Shores of Greece, the North of Egypt, Algeria.

Art. 36.—*A Mode of Restoration in Pulmonary Consumption.* By Dr. Theophilus Thompson, F.R.S.

(*Lancet*, May 17, 1856.)

"When we speak of the cure of phthisis, the idea usually suggested to the mind is that of a closed vomica; the accidental tissue which encloses the cavity being contracted, and drawing with it the pulmonary substance, so as to produce external puckering; whilst within, there is presented an imperfect cicatrix of fibrous material. This change, however, I suspect is not so frequent as that to which I propose to invite the attention of the profession, occurring in certain cases where the tubercular deposit is in small masses surrounded by healthy portions of lung. The exudations poured out around a tubercular deposit may prove nutritive, and conduce to its maintenance; but, on the other hand, if incapable of development, they may rapidly degenerate, and softening may ensue; and the pulmonary tissue may become infiltrated with tubercular pus, abounding in solitary molecules, masses of fat globules, nuclei, and incomplete cell formations. The process of disintegration thus set up, unfavorably affecting the surrounding texture, the process of destruction extends; but under more favorable circumstances, the tubercular substance may undergo a different kind of metamorphosis, and, its development ceasing, it may waste, in consequence of the withdrawal of nutritive material; the

organic elements may be absorbed, leaving only calcareous salts, combined with aggregate fat globules, pigment masses, and plates of cholesterine. This change is not uncommon. It may, I think, often be traced in a certain class of delicate dyspeptic individuals whose vital powers have been husbanded. One of the most remarkable signs which I have found accompanying this form of tubercular disease, is the modification of the respiratory sound, which I have ventured to designate 'wavy inspiration,' because it conveys to the ear the impression that the air enters by a succession of waves instead of a continuous stream. There are several varieties of wavy inspiration, more or less extensive, variable, and transient: one, dependent on bronchial affection, usually accompanied with rhonchus; a second, of high key, associated with rheumatism of the muscles of the chest; a third, combined with pleuritic friction sound, and increased by pressure; but the variety which has special reference to the affection under consideration, is a delicate, somewhat distinct sound, limited in extent, and usually persistent until superseded by signs of more advanced disease. Several of these varieties of wavy inspiration may, indeed, be associated in the same individual, but may still be distinguished and interpreted, as in the patient whose case I proceed to describe."

Case.—Mr. C—, a gentleman, æt. 32, residing in one of the suburbs of London, applied to me, on the 16th of March, 1854, complaining of weakness and of slight cough. He was five feet ten inches in height, and weighed nine stone eleven pounds. At the General Exhibition, in 1851, he weighed nine stone twelve pounds, but soon afterwards lost flesh; subsequently he increased in weight, but recently had again declined. One of his sisters died of phthisis, another had threatenings of the disease, but recovered. Two years since he had slight hæmoptysis in streaks, and had lately occasionally awoke with blood in his mouth. There was slight dulness on percussion near the acromial end of the right subclavicular region, but the principal physical signs were on the left side, consisting of wavy inspiration over the whole apex before and behind, at some parts accompanied with friction sound, and increased by pressure, and attended with superficial pain. The pulse was 88 in the sitting, 116 in the standing, posture; the gums presenting the festoon common in consumptive subjects; tongue rather white; bowels regular; urine depositing lithates. I prescribed a turpentine liniment, a grain of extract of colchicum every night, and saline draughts, with hydrocyanic acid.

March 20th.—Wavy inspiration of lower key, and less extensively heard; a little above the left nipple sounding distant, and not increased by pressure; expectoration dotted with blood, and, under the microscope, found to contain pus globules, granules, and *elastic tissue of the lungs*, teased out as though long imprisoned; also much large angular epithelium from the fauces. In correspondence with this last observation, the fauces were flushed and granular. I prescribed lemon-juice, prussic acid, and tincture of hop, with infusion of cascarilla.

26th.—Weight, nine stone ten pounds; wavy inspiration still marked; fauces very granular. I directed a continuance of the mixture, two drachms of cod-liver oil twice daily, and an application to the fauces, composed of equal parts of trisnitrate of bismuth, mucilaginous mixture, almond oil, and rose water.

On the 3d of April, the throat appeared better; the pulse was 84; other symptoms as before, excepting that there was much night perspiration, for the

relief of which I prescribed four grains of oxide of zinc, and four of extract of henbane, to be taken every night.

On the 18th of April there was some click ("humid crepitation") above the left nipple; pulse 88; weight, nine stone nine pounds. The dose of cod-liver oil was increased.

May 1st.—He was somewhat improved in feeling and appearance, but there was "dry glass-rubbing sound" at some points of the left apex. A blister was therefore applied over this region.

17th.—Weight, nine stone twelve pounds; pulse reported to be 66 when he awakes in the morning. To have of iodide of potassium two grains, ten minims of solution of potash, with infusion of cascarilla, three times a day, and to continue the oil.

June 10th.—Weight, nine stone thirteen pounds; throat decidedly better, but the click continuing.

18th.—Weight advanced to ten stone one and a half pounds, although for some days rather free hæmoptysis had occurred. After a few doses of sulphate of magnesia, with infusion of roses, the spitting of blood ceased; but the bowels being confined, diluted aloetic pills were administered.

After this date the click near the left nipple extended. On August 15th the patient's weight had fallen to nine stone eleven pounds, and the pulse risen to 92. The throat was relaxed, and the tongue white. The dose of cod-liver oil was increased, and he was directed to have a tannic-acid gargle, and a mixture of nitro-hydrochloric and hydrocyanic acid. During the two following months there was little change, excepting slight increase of weight. There was slight hæmoptysis and some night perspirations, but the latter symptom yielded to oxide of zinc. On the 16th of October his general feelings were improved, but the pulse was 92, and there was wavy inspiration of high key in the left subscapular, and crackle ("dry crepitation") in the middle subclavicular region. In addition to his other medicine, a grain of quinine was prescribed, to be taken thrice daily. On the 31st of October his weight was ten stone four pounds, being an increase of six pounds in a fortnight; pulse 88.

November 21.—There was slight hæmoptysis, and extensive wavy inspiration before and behind. Half a drachm of iodine, a drachm of iodide of potassium, to be dissolved in half an ounce of spirit, for an application to the left subclavicular region.

28th.—Weight, ten stone seven pounds; pulse 76; some pain on the left side of the chest. Chloroform and laudanum, with soap liniment, to be applied; other medicines continued.

During the first three months of 1855, the click extended a little downwards, and there was pain near the left nipple, but these symptoms disappeared. The expectoration, which had varied much in quantity, gradually diminished, and at one period in the month of May was accompanied with a little *calcareous matter tinged with blood.* The treatment during this period was not altered materially, excepting by the addition of free inunction of coco-olein, having a grain of iodine dissolved in each ounce. In June this patient weighed ten stone ten pounds, and his pulse varied from 60 to 70; there was slight bronchophony in the middle subclavicular region on the left side, but no click, and near this point a little delicate wavy inspiration, but the high-keyed wave was no longer to be detected. From the time of the calcareous expectoration the marked fluctuations of condition were no longer observed, he steadily improved in condition, and is now able to walk six miles, and attend with comfort to his ordinary professional avocations.

It may be difficult to determine the relative influence of the different

remedies employed in promoting the satisfactory result; but there can be little doubt that, irrespective of general hygienic measures, the cod-liver oil was of essential service, and that its good effect was increased by the contemporaneous administration of quinine. The endermic introduction of cocoolein and iodine has also appeared to me in the present and some other instances to be useful.

"In the case next to be described, a similar process appears in the first instance to have occurred, followed, however, under less favorable circumstances, by a renewal of disease."

Case.—A medical practitioner, æt. 27, in the year 1852, had dull percussion over a small portion of the lung, corresponding to the second intercostal space on the left side. In January, 1853, he had a little calcareous expectoration, the size of a split pea, mixed with a little blood. The dulness disappeared, and he remained tolerably well until about the autumn of 1854, when he contracted influenza and cough, which he thinks were rendered severe by bad diet and exposure to the weather in the Caffre war. He was a seven-months' child, and could never eat butter or fat. Hair abundant on head and arms, but remarkably deficient on the chest. He had suffered severely from shingles.

On the 14th of April, 1855, he applied to me in consequence of slight morning cough, accompanied with expectoration of a little thick, yellow mucus, sometimes resembling milk when falling through water. I found dull percussion at the acromial end of the right subclavicular region, and wavy inspiration at the summits of both lungs, but chiefly of the right, where there was also prolonged expiratory murmur. Pulse 88, sitting; 108, standing. I prescribed sarsaparilla with solution of potash and taraxacum, and an appropriate place of recreation in the country. This plan, however, he was prevented from carrying out, but went to the north of England, where, after much professional exertion and responsibility, he had an attack of hæmoptysis.

June 13th.—I found marked increase of dulness, and bronchial respiration, where formerly wavy inspiration was the principal sign. He felt weaker; his eyes were pearly-looking; his general aspect unpromising; *the expectoration submitted to the microscope was found to contain much pulmonary tissue.*

This case must be regarded as a second attack of phthisis, which in the first instance had pursued (like the case first described) a progress towards recovery. I know of several instances in which, after a repeated recurrence of such conditions, the disease has remained in abeyance, and the patient become able to discharge a full share of the duties of life.

"Such cases occur chiefly amongst patients in constitutional conditions rather delicate than unsound, and of active habits, easily fatigued, subject to neuralgia, often hypochondriacal, (and not unfrequently having jugular murmur,) but remarkably varying in efficiency for the discharge of active duty, according to the extent to which hygienic rules can be observed. Wavy inspiration is a principal local manifestation. This sound indicating, as I believe, a free expansion of the neighbouring portion of lung, the result of a condition favorable to the happy termination of the disease, with calcareous metamorphosis of the tubercular deposit."

Art. 37.—*On the treatment of Pneumonia and Pleurisy.* By Dr. Niemeyer, Professor of Clinical Medicine in Greifswalde.

(*Prager Vierteljahrsschr.*, Bd. iv, p. 121, 1855; and *Med.-Chir. Review*, July, 1856.

Professor Niemeyer is much opposed to the employment of general venesection in pneumonia and pleurisy, and only uses it exceptionally with a view to prevent impending suffocation, and to facilitate the reflux of the blood from the brain, but not for the purpose of arresting the inflammation. He agrees with the observation of Dieck, that the convalescence is more rapid in those cases that have been treated without than in those which have been treated with venesection; and he explains the fact by the increase of fibrin, and diminution in the amount of the red corpuscles, induced by the venesection.

The treatment adopted by Professor Niemeyer consists in the application of compresses wrung out in cold water over the affected part of the thorax, and their renewal as often as they become warm. The great relief experienced by the patient is a sufficient guarantee that the repetition of the application will be carefully attended to. The only internal remedy employed was nitre, in doses of two drachms in the course of twenty-four hours. Although employed at different ages, and in various forms of the disease, no metastasis or other evil consequences have ever been noticed by the author. He has seen persons attacked with very tumultuous symptoms, enabled by this treatment to return to their occupation on the seventh day after seizure. Professor Niemeyer recommends an early exhibition of steel in the convalescence from the diseases under consideration.

Art. 38.—*Pneumonia originating in the Pulmonary Capillaries.* By Dr. Gordon.

(*Dublin Quarterly Journal of Medical Science*, Aug. 1856.)

This form of pneumonia appears to be essentially a blood-disease, and sometimes comes on very suddenly, at other times more slowly; like all diseases of this type, it is often epidemic; it sometimes supervenes on other diseases, but often attacks persons who were previously in apparently good health. The great chemical alteration which the blood would appear to undergo, consists in the augmentation of the fibrine, but this augmentation taking place, amongst other modes, by the conversion into it of a more or less considerable quantity of the albumen: we thus have two distinct morbid actions taking place within the sanguiniferous system, one consisting in the removal of the great nutrient or formative power in the blood, and the other in the sudden engorgement of the capillaries with a great mass of, most probably, crude fibrine, which, partly from depressed vital action, and partly from mechanical over-distension, they are unable to transmit.

The symptoms and physical signs with which this form of disease is attended are such as are not merely easily reconcileable with this

improved condition of the blood, and engorgement of the pulmonary vessels, but such as we might naturally expect to be produced by such amount of morbid action. It rarely happens that we have an opportunity of examining the lungs of a patient who has died in the very early stage of this affection. I have said above that the disease is frequently epidemic; it would seem to have been so in the year 1841, at which time I was resident clinical clerk in the Hardwicke Hospital; it then attacked several patients who were recovering from fever, and their strength being already greatly reduced, some died within a few hours from the commencement of the attack; these cases were carefully noted by me at the time, and the post-mortem appearances were exhibited at different meetings of the Pathological Society, by Dr. Corrigan, physician to the hospital. Cases apparently similar were also noticed about the same time by Dr. Stokes and Dr. O'Ferrall. One of Dr. Corrigan's communications on the subject terminates as follows:—"The circumstances I have mentioned, if confirmed by future observations, would go to establish an idiopathic form of disease, characterised chiefly by an atonic state of the vessels, *and in which the symptoms were not amenable to any of the usual modes of treatment.*

The appearance of a lung when seen in the *very early* stage of this form of pneumonia is very unlike that produced by acute inflammation of the air-vesicles of the lung. When first seen after the opening of the thorax, it presents a dark blue colour. This appearance, however, is very evanescent, and is almost completely lost in the course of three or four hours after the lung has been removed. When grasped in the hand, it feels like muscle; but, unlike what is usually termed carnified lung, it is increased rather than diminished in size, but is not so much increased as in the more ordinary form of pneumonia: it is firm and heavy, and sinks in water, but does not appear to have any tendency to pass into any form of hepatization, nor does it afford any feeling of crepitation, or anything allied thereto. This description, which I have borrowed from my reports of the cases above alluded to, and from Dr. Corrigan's demonstration of the appearances before the Pathological Society, as well as from subsequent examination of other similar cases, appears to me to indicate a modification of pulmonary disease altogether different from ordinary vesicular pneumonia, nor yet to be confounded with pulmonary apoplexy, or "the collapse of the lung as connected with bronchial obstruction," described by Gairdner and others.

The symptoms which existed in those who died in this very early stage, were great and sudden collapse, sudden lividity, and coldness of the surface; the lips became purple, and a dark flush arose on the face; they complained of excessive weakness; there was great depression of strength—in fact, "in no case could the asthenic character be better marked." In some cases the patient complained of difficulty of breathing; but even when there was no complaint uttered, the increased rapidity of the respiratory acts—in one case they amounted to sixty in the minute—indicated great pulmonary obstruction. The respiration was usually diaphragmatic; the tongue was moist and dark-coloured; the pulse small, feeble, and very rapid; the surface of the body almost cold; there was seldom any complaint of cough, but there was frequently pain in the side, which was not always referred to the

part where the physical signs showed the existence of disease. These physical signs were, great dulness on percussion over a certain portion of the chest, according to the extent of lung engaged, which did not seem to follow any precise rule; in some instances the upper part of the lung was affected, sometimes the lower, sometimes portions of both lungs; and, corresponding to the amount of dulness, there was either absence or great feebleness of the respiratory murmur.

Patients dying in this stage of the disease died generally of collapse. I have never seen those extreme symptoms to attend this disease, except in individuals who were greatly reduced by previous illness, or some other cause: they generally, but not always, prove fatal. Several recovered during the epidemic in 1841, and within the last two months I saw a very well-marked case of it, which recovered, under Dr. Corrigan's care, in the Hardwicke Hospital.

The symptoms which attend the disease, as it generally comes under our notice, and which seem to distinguish it from ordinary pneumonia, are, that—1. The peculiar heat of the skin, so forcibly dwelt upon by Addison, as almost pathognomonic of pneumonia, does not exist; the skin is never very hot, sometimes dry, often cool, and even perspiring; but it very early acquires a peculiar *jaunâtre* aspect, which it retains throughout, and often does not lose for some time after all physical evidence of disease has vanished. This symptom, was very strongly marked in several cases lately in hospital, some of whom are still under observation. 2. The cough is altogether different in character from that of ordinary pneumonia: it is very short, frequent, and performed without any apparent muscular effort whatsoever—very unlike the painful and distressing cough so often witnessed in vesicular pneumonia. 3. There is seldom any expectoration; when it does occur, it is not viscid, nor homogeneous, nor tenacious. 4. There is seldom much pain in the side; never the acute, stabbing pain, which occurs in vesicular pneumonia from the pleura being implicated, because we rarely find pleurisy existing in this form of disease, and, as we remarked before, we often find the patient refer the pain which he does complain of to a part of the chest where we have no other evidence of disease existing. 5. The high fever which attends vesicular pneumonia is absent; the pulse is seldom remarkably frequent; it is always feeble, and soon acquires a peculiar jerking feel, which it owes to the tenuity of the blood. The patient has frequently a listless and careless manner, and appears unwilling to speak even about his illness. Such was the case in a boy, about nine years of age, who was admitted into the Hardwicke Hospital, on June 5th, with solidification of almost the entire of one lung; yet neither he, nor his parents, who came with him, mentioned any one symptom from which such disease might be inferred. The prominent symptom for which they requested relief was constant vomiting. In some cases the pulmonary affection is accompanied by an attack of herpes labialis. There is always complete loss of appetite for solid food, but often great thirst; considerable modification of the voice often exists, amounting in some instances very nearly to aphonia; there is sometimes restlessness, and often insomnia. The physical signs are very constant: there is a dull sound on percussion over the affected portion of the lung or lungs, and at first very feeble

respiratory murmur, which, however, maintains somewhat its vesicular character, but soon becomes very decidedly bronchial. The peculiar crepitus of vesicular pneumonia is never audible. If the patient recovers, the progress of the physical signs is very remarkable; sometimes within twenty-four hours the extreme bronchial respiration and bronchophony are replaced by a feeble or even ordinary vesicular murmur, proving that the air-cells merely suffered obliteration from pressure, which, being removed, they again expanded.

The patient seldom dies in this stage: when he does, it is generally found that a very great portion of the lungs is engaged in the disease; they are very tough and heavy, and a section of them exhibits an uniform light gray colour. But the progress of this affection is very rapid (it seldom extends over a period of weeks, like some cases of vesicular pneumonia, which has passed through all its stages), and the lung seems readily to pass into a condition somewhat allied to gangrenous degeneration. Effusion now takes place into the bronchial tubes, and the patient dies asphyxiated. Post-mortem examination usually shows the lung to be of a dirty gray colour; there is no well-marked suppuration, but a species of general softening, and commencing decomposition. * * * *

I would infer that the amount of albumen which may appear in the urine of a patient affected with this form of pneumonia, is not indicative of the amount of pulmonary disease, nor does its accumulation prove the extension of the pneumonia; but that, on the contrary, from the appearance of albumen in the urine in such cases, we may anticipate an amendment in the original disease; and that, from a sudden disappearance of albumen from the urine we may dread a relapse of the pulmonary affection. * * * *

Perhaps one of the best-marked features of this disease is, "its not being amenable to any of the usual modes of treatment." I need not here allude to the more than inefficacy of abstraction of blood in any form to meet its requirements. The treatment by tartar emetic is equally inapplicable; and the mercurial plan of treatment, as it is termed, is also powerless to control this formidable affection. The treatment by the internal use of oil of turpentine, so advantageous in the suppurative stage of vesicular pneumonia, does not appear to have any influence on this form of disease. Wine and the usual diffusible stimulants support the patient's strength, and add to his vital energy, and so are of use; but they seem to have no specific power over the disease, such as is evidently exercised by the sulphate of quina. During the last eight months I have treated with quina all the cases of this form of pneumonia which I have witnessed, and I have had the opportunity of observing several cases similarly treated by Dr. Corrigan in the Hardwicke Hospital. On the 19th of April last, Dr. Corrigan, presented to the Pathological Society a specimen of this form of pulmonary disease, when he took occasion to allude to the efficacy of quina in its treatment. The result of this treatment has been that, of the cases which came under observation before effusion had taken place into the bronchial tubes, none proved fatal; while some few recovered, even after the lips had become blue, the face congested, and mucous râles were audible in the bronchial tubes.

ART. 39.—*On the connection between certain forms of Pneumonia and Renal Disease.* By Dr. B. Z. M'DOWELL, Physician to the Whitworth and Hardwicke Hospital, &c.

(*Dublin Quarterly Journal of Medicine*, May, 1856.)

Dr. M'Dowell's object in this paper is to direct attention to a combination of morbid conditions, which does not appear to have been *specially* noticed,—the frequent coexistence, namely, of certain suppurative inflammations with chronic renal disease, but more especially to the combination of the latter with the suppurative and gangrenous forms of pneumonia, of which several cases have recently come under his notice.

At a recent meeting of the Pathological Society of Dublin (19th January, 1856), Dr. M'Dowell exhibited a specimen of gangrenous pneumonia, in which a diseased condition of the kidneys likewise existed (this case is the second of the two cases here selected); and his remarks at the time were thus reported:

"Dr. M'Dowell particularly directed the attention of the Society to this combination of disease, and stated his belief that chronic renal disease had a great influence on the development of suppurative inflammations. This he had especially observed in pneumonia, as, for the last eighteen months, during which period he had paid particular attention to this subject, *he had not met with a fatal case of suppurative pneumonia in which renal disease was not also found to exist.* His opinion was, that pneumonia, in the great majority of instances, passes through certain regular phases, which naturally tend to a restoration of the healthy condition of the lung; but that when pneumonia occurred in a person in whom renal disease had pre-existed, the tendency of the disease then was to assume the suppurative, or the gangrenous form."

Dr. M'Dowell gives twelve cases in illustration, of which we copy two.

CASE 1.—*Double pneumonia. Purulent infiltration of the lungs. Bright's disease of the kidney. Death on the sixth day.*—Thomas Wood, a carman, æt. 32, was admitted into the Hardwicke Hospital, under Dr. M'Dowell's care, August 5th, 1853. Patient was a man of very intemperate habits. Three days before admission (Sunday) he got drunk, and was exposed all night to wind and rain. He returned home early on Monday, feeling chilled and ill; violent rigors followed, with cough and oppression of the breathing.

On admission (fourth day, Wednesday), the face was darkly flushed, the dyspnœa intense, and there was total prostration of strength. Respiration 44; pulse 130 in the minute; skin extremely hot; there was frequent cough, with thin, scanty, colourless expectoration; and pain on inspiration in the left side.

Double pneumonia was found to exist, the right lung being principally engaged; more than half of this lung gave the signs of solidification; over the lower portion of the left lung friction likewise existed, denoting the co-existence of pleuritis.

Fifth day. Right lung wholly solidified.

Respiration 52; pulse 140; raved incessantly all night; dyspnœa more urgent; vomiting; died on Thursday evening, sixth day of the disease.

Autopsy.—Thoracic viscera.—Double pneumonia, with pleuritis on the left side. The right lung was solidified throughout, and infiltrated with dark-coloured pus; the tissue of the lung was very friable and non-crepitant. The left lung was solidified in patches, in all of which pus was diffused. The uninflamed portion of the lung was emphysematous. The pericardium was extremely adherent to the heart; in some places the adhesions consisted of bands half an inch long. The heart was enlarged and hypertrophied, weighing 16 oz. when separated from the pericardium. Its tissue was slightly softer than natural, bnt its valvular apparatus was perfectly healthy.

Abdominal viscera.—The liver was large and pale. The spleen softened. but of natural size.

The kidneys were extensively diseased; externally both were pale, smooth, and mottled. The tubular structure had nearly altogether disappeared, and white, soft, fatty-looking material occupied the greater bulk of the organ. The left was much diminished in size. The right weighed 5½ oz., and the left 2½ oz. only; in the latter a fibrinous clot of a brown colour lay in a small cavity, with the walls of which it had but a very slight connection. ('Pathological Register of the Whitworth and Hardwicke Hospitals.')

Case 9.—*Pneumonia of the left lung, terminating in gangrene. Fatal in seventeen days. Both kidneys extensively diseased.*—Eliza Champion, æt. 28, was admitted into the Hardwicke Hospital, under Dr. M'Dowell's care, December 31st, 1855. On Saturday, the 22d, had a severe rigor, followed, after three days, by cough and fetid expectoration. Two days after her admission she miscarried of a fœtus at the seventh month. On the day following, January 2d, she was much prostrated, weak, and sunk. Pulse rapid and small; expectoration copious, dark-coloured, thin, and fetid; bright circumscribed flush on each cheek; pupils contracted; cough very troublesome. Respirations 56; pulse 136; the breath was fetid. On examination amphoric blowing was found to exist over the greater portion of the back of the left lung; metallic resonance of the voice, and gurgling, were likewise evident; but there was no splash heard on succussion; whilst abnormal tympany, and the signs of excentric displacement, were absent. The diagnosis of a large gangrenous cavity in the left lung was not therefore difficult.

She was ordered eight ounces of wine daily, and an ounce of a mixture containing six drachms of syrup of bark, three drachms of solution of chloride of soda, one drachm of tincture of opium, and six ounces and a half of water, to be taken every fourth hour. Treatment did not seem to influence the progress of the disease; the expectoration became greater in quantity, and more and more offensive; soon it gurgled up from the throat with little effort on the part of the patient; presently, shreds of a stringy substance, like fragments of lung, were coughed up, and from this time the fetor became almost insufferable; yet the strength did not seem to give way much until the eighth, when diffused inflammation of the left parotid region appeared; then came rapid sinking, and death ensued on the following morning.

Autopsy.—The left lung was found in a state of absolute putrefaction; what remained of it hung in loose shreds, revealing a dissection of the tubes and vessels; recent lymph, contrasting by its white colour with the black mass beneath, lay in thick patches on the pleural surface. The *right lung*, which was nowhere solidified, was found studded with several gangrenous vesicles, from which, when they were cut into, fetid gas and grayish-coloured pus escaped, whilst the substance of the lung beneath was found deeply disorganized. The *kidneys* were symmetrically and extensively diseased; a section

showed a great increase in the depth of the cortex, an adventitious deposit, absorption of the central cones, and an excessive deposition of fat towards the pelvis.

The order of the morbid changes in this case was, probably, the following: first, pleuro-pneumonia of the left lung, which rapidly passed into gangrene (owing, as I believe, to the existence of extensive renal disease); secondly, the gases thus generated were absorbed, giving rise to a putrescent condition of the blood; as the result of which we had, thirdly, cellulitis of the parotid region, and gangrene in isolated patches (not preceded by inflammatory consolidation) of the right lung.

"These cases, twelve in number," Dr. M'Dowell proceeds, "constitute the evidence in support of the opinion, already several times expressed, that between pneumonia in its worst and most fatal forms, and structural disease of the kidneys, some definite relationship exists. If this opinion be adopted, and if we regard the combination of diseases illustrated by these cases, as representing parts in one great chain of pathological sequences, then the order of these sequences is easily traced out. It is no new doctrine that a diseased condition of the kidneys cannot long exist without an impairment, more or less serious, of the great function of excretion. A morbid condition of the blood is established as the result of imperfect depuration; hence arise certain secondary affections, of which (in connection with diseased kidneys) serous inflammations and affections of the brain and heart have attracted the most attention. But it is probable that the secondary affections which depend on organic renal disease, will vary according to the stage of the disease, or according to the peculiar form under which it is manifested.

"'Bright's disease,' we now know, is a generic term which includes several dissimilar diseased conditions of the kidney; and whilst inflammation of the serous membranes may be more frequently associated with one particular form of disease—viz., the small, contracted, "granular" kidney—pneumonia in its worst forms (gangrenous or suppurative) may be more particularly the secondary result of the large, smooth, pale kidney, which was so uniformly found to coexist in the cases already detailed.

"In these observations my object has been to avoid theorizing, and to furnish a simple statement of clinical facts; and I am perfectly ready to adopt or reject the opinions here advanced, as more extended observations may either confirm or refute them.

"At another time I hope to be able to furnish some evidence of the influence which renal disease exercises on the development of pyemia in general; and, in fine, will very briefly state the conclusions which I think may naturally be deduced from the cases given in the preceding pages:

"1. That in fatal cases of pneumonia renal disease is very frequently found to exist.

"2. That where such a combination of disease exists, suppuration of the lung will be very constantly met with.

"3. That a similar morbid condition of the kidney is often found in gangrene of the lung.

"4. Or, it may be conversely stated, that where pneumonia super-

venes in a person, in whom renal disease has previously existed, it is very apt to assume the suppurative or the gangrenous form.

"5. That pneumonia, when it occurs in such fatal forms, and under such circumstances, is probably one of the 'secondary affections' of 'Bright's disease.'

"It has not been my intention to convey the idea that pneumonia has never been enumerated by authors as one of the complications of 'Bright's disease;' though some writers are silent on the subject, others have distinctly noticed it, especially Rayer. But it will be found that the pneumonia described in this paper is of a different nature from that noticed by Rayer. The pneumonia which he describes as secondary to 'albuminous nephritis' comes on at a late period, and after the dropsy and other symptoms of the renal disease have been fully pronounced; and hence he observes:—'The symptoms of such pneumonias are more or less marked by those of dropsy, or by the symptoms of cardiac disease, or other concomitant pulmonary lesions.' In none of the cases above described was renal disease suspected to exist; all were apparently in the enjoyment of good health up to the moment of the sudden development of the pulmonary affection. Neither do the cases of pneumonia, alluded to by Rayer and other authors (Bright, Gregory, Christison), resemble, in their anatomical characters, those detailed in the preceding paper. Suppuration and gangrene, either of which was found in all these instances, were not observed by any of these authors. One of Rayer's cases, however, is an exception to this statement—Case 38—in which external suppuration of the lung was found to exist. In the other two (for only three cases are given by Rayer in illustration) red hepatization and œdema, with engorgement of the lungs, were the principal morbid changes."

ART. 40.—*On the pathology of Hooping-cough* By Dr. HYDE SALTER, Assistant-Physician to Charing-Cross Hospital, &c.

(*Lancet*, July 5, 1856.)

The paper of which the abstract is here subjoined, was read before the Medical Society of London, May 24th, 1856:

After enumerating some of the many discrepant and imaginative theories of the nature of hooping-cough that writers on the subject had indulged in, the author stated, in answer to the question—To what category of derangements do the most constant and characteristic features of the disease the most intimately unite it?—that, in his opinion, it was to the contagious fevers—to those diseases which consist of the assumption into the body of some specific *materies morbi* introduced from without, and undergoing a certain process of self-multiplication within the system—to the zymotic diseases; in fact, in favour of this view, he said, there was this threefold evidence:—1st. That hooping-cough was contagious. 2d. That it runs a definite course, having certain premonitory signs: certain phenomena when the disease has attained its height, and certain sequelæ. 3d. That it is self-prophylactic; a person having had it once does not have it again.

Now the three circumstances—contagion, definite course, and self-prophylaxis, are, he maintained, *par excellence*, the three characteristic circumstances of the contagious fevers, and the possession by any disease of these three features would always be, to him, a sufficient warrant for its admission into that family of disorders. The author then thus stated, in more exact terms, his views:—That the catching of hooping-cough depends upon the inoculation of the system with a specific poison; that this poison chooses for itself a certain eliminatory surface as its emunctory; that the surface that it so chooses is the respiratory tract of the mucous membrane, from the conjunctiva to the ultimate bronchial tubes, although the whole of the tract need not be involved in every case; that its material presence gives rise to an exalted sensibility and inflammation of the part; and that the exalted sensibility and inflammation constitute the proximate cause of the specific symptoms. The author's conviction of the correctness of the above theory was based on the following considerations:—*a*. The premonitory symptoms of catarrh, injection of the eyes, coryza, &c. *b*. The symptoms of vascular disturbance of the trachea, bronchial tubes, large and small, down even, in many cases, to the ultimate lung-structure, that generally accompany or follow the cough. *c*. The intermediate position with regard to time, of the laryngeal, between the nasal and the bronchial symptoms, implying a creeping down of the condition of the mucous membrane, in a regular course. *d*. The power which one child will have, who does not hoop, of communicating the disease to another who will; showing that the spasmodic part of the affection is non-essential. *e*. The eliminatory power of the surface, which is consistent with the supposed final cause of its being affected. *f*. The support derived from the whole weight of the argument of analogy. Dr. Salter concluded by considering, in succession, certain objections to his theory, which he could conceive others to make, but which, from want of space, we are unable to enumerate.

ART. 41.—*On obstruction of the Pulmonary Artery.* By Dr. G. H. KIDD, Assistant-Physician to the Coombe Lying-in-Hospital.

(*Dublin Quarterly Journal of Medicine*, NOV. 1856.)

A case of obstruction of the pulmonary artery occurring in the Coombe Lying-in Hospital, and recorded in this paper, together with the cases related by Cruveilhier and others, affords, in Dr. Kidd's opinion, a series of symptoms sufficiently general, at least, to direct attention to the condition of the pulmonary artery. First, there is a degree of fever, with impaired appetite, scanty or suppressed secretions, and vomiting, as usually occurs at the onset of phlebitis elsewhere; a sense of pain at the precordium, and tightness of the chest may be complained of; the countenance gradually assumes the well-known and remarkable phlebitic aspect; great debility is evident, attended, it may be, with a tendency to syncope; along with this there is great quickness of the pulse, which is at the same time small, weak, soft, and compressible. The debility is greater than

there is anything in the other symptoms to account for, and evidently depends on the diminished current in the arteries, and deficient supply to the nervous centres and to the muscles. The languid circulation and congested state of the venous system are still further shown by the violet patches, the œdema, and tendency to sloughing of the integuments. The overburdened right ventricle relieves itself by regurgitation: hence the swollen, and, perhaps, pulsating jugulars. The respiratory movements are rapid, attempting to compensate by increased action for the limited portion of the lung that is taking part in the aëration of the blood, and vesicular emphysema may now occur, as observed in Dr. Gordon's case.

The constitutional symptoms of phlebitis may now increase in gravity, miliary or red eruptions appear, and the patient gradually fall into the typhoid state, and die. All this time, the uterus, if it be a puerperal case, may manifest no sign of its veins being affected; or, if they had been affected, as in Cruveilhier's case, the disease may have yielded at an early stage to treatment. Instead of terminating thus, the patient may be cut off suddenly, at an earlier stage, after some unusual muscular exertion whereby the systemic circulation has been hurried, and the great centres deprived of blood more quickly than the diminished stream from the lungs could renew their supplies; or the progress of the case may even yield hopes of a recovery, the graver symptoms subsiding, but the same sad fate ensuing on any sudden exertion.

Of 32 cases of obstruction of the pulmonary artery, from various causes, that have been published, including this that came under Dr. Kidd's notice, death occurred suddenly—that is, either in apparent health or in apparently favorable convalescence—in 10 instances. In 6 it occurred during serious illness, but without any symptoms to cause it to be foreseen. In 12 cases its approach seems to have been gradual, and in 4 the mode of its occurrence is not stated. Of the prognosis or treatment of a disease which has hitherto been recognised only by dissection after death, it is almost idle to speak, yet the appearances found in one of the cases already quoted from Mr. Paget afford reason to believe that nature has effected a partial cure. Three of the cases recorded by Dr. Cheevers presented very similar traces of a disease that was in process of cure; and certainly, reasoning from analogy, there is no ground for regarding the case as utterly hopeless. How far Art may be able to assist Nature in her attempts at a cure may be questionable. Certain salts, it is believed, as the nitrate of potash, have the power of hastening the solution of fibrinous deposits, and are perhaps, deserving of a trial. One thing, however, is certain, that in all cases where the existence of an obstruction may be suspected, the most absolute quiet, in the horizontal position, and freedom from emotion or muscular exertion, should be maintained till the pulse regain its fulness and lose its frequency, and the ease of the respiratory movements indicate the perfect performance of the function of the lungs.

Art. 42.—*On Chloroform in affections of the Chest.* By Dr. Breithaupt.

(*Méd. Zeitung.* No. 39, 1856 ; and *Medical Times and Gazette*, May 24, 1856.)

Dr. Breithaupt states that he has found chloroform useful not only in pneumonia, but in the form of bronchitis that nearest approaches to this, the bronchitis cruposa capillaris, in which the small bronchial tubes become filled with fibrous exudations. It is, in fact, just at the most dangerous periods of these diseases it becomes most useful, viz., when an accumulation of exudation takes place in the cells of the lungs or in the finer bronchi, inducing great dyspnœa, and impeding the de-oxygenation of the blood. The author, after frequently employing chloroform in catarrh, and in the first stage of pneumonia or bronchitis, has come to the conclusion, that it exerts no special action, nor is attended with any mischievous effect, although it cannot always be given with impunity in large and frequent doses. It at once diminishes the dyspnœa and irritating cough, but does no more, and should not be trusted, to the neglect of venesection, except in those slight cases in which a mere antiphlogistic regimen suffices for a cure. But while in the early stages it is a mere adjuvant, it is at a later period a means of great value, when from the obstruction of the cells and smaller bronchi a severe degree of dyspnœa is produced and paralysis of the lung threatened. While the means usually employed, as arnica, benzoin, or camphor, are useless or only aggravate the condition, the chloroform proves of great utility. Dr. Breithaupt believes it acts on the one hand by expanding the obstructed part, and aiding by this, as well as by its locally stimulating influence, the expectoration ; and, on the other hand, by the calming influence it exerts upon the irritated nervous system of the respiratory organs. In the cases related, the patients seemed as if suffocated, and the sensorium had begun to be disturbed ; freer and deeper respiration followed when the sense of pain and anguish had been removed. Such freer expansion of the lung necessarily gave rise to a freer pulmonary circulation and a better oxidation of the blood. The best proof of this influence is seen in its employment for the paroxysms of dyspnœa in phthisis. Here, where blisters, analeptics, opiates, &c., not unfrequently add new inconveniences to those in existence, chloroform, in its tranquillizing and reviving effects can scarcely be surpassed by any other agent.

Art. 43.—"*The ready method in Asphyxia.*" By Dr. Marshall Hall.

(*Lancet*, Oct. 25, 1856.)

Several important additions and improvements having been made in this mode of treatment, Dr. Hall thinks it right to lay the last and best form which it has assumed before us. Dr. Hall proceeds :

"It will be obvious to us all, that our main objects are—to renew

respiration and improve the circulation. Our *means* are physiological and physical; our Rules as follow:

"All obstruction of the glottis being removed by placing the patient in a *prone* position, in which any fluids and the tongue itself fall forward (Rule I), our *first* effort is to *excite* respiration physiologically (Rule II); our *second*, if this fail, is to *imitate* the acts of respiration mechanically (Rule III); our next object is to endeavour to improve the circulation, which is done by promoting the flow of the venous blood, and to restore warmth in the limbs (Rule IV); we again, as we proceed, revert to the physiological principle of *exciting* respiration from time to time (Rule V).

"RULES.

"1. Treat the patient, *instantly*, *on the spot*, in the *open air*, freely exposing the face, neck, and chest, to the breeze, except in severe weather.

"2. Send with all speed for medical aid, and for articles of clothing, blankets, &c.

"*I. To clear the throat—*

"3. Place the patient gently on the face, with one *wrist* under the forehead; [all fluids and the tongue itself then fall forwards, and leave the entrance into the windpipe *free*].

"*II. To excite respiration—*

"4. Turn the patient slightly on his side, and

"(i) Apply snuff or other irritant to the nostrils, and

"(ii) Dash cold water on the face previously rubbed briskly until it is warm.

"If there be no success, lose no time, but,

"*III. To imitate respiration—*

"5. Replace the patient on his face.

"6. Turn the body gently, but completely, *on the side and a little beyond*, and then on the face, alternately; repeating these measures deliberately, efficiently, and perseveringly, fifteen times in a minute, *only*; [when the patient reposes on the thorax, this cavity is *compressed* by the weight of the body, and *ex*piration takes place; when he is turned on the side, this pressure is removed and *in*spiration occurs].

"7. When the *prone* position is resumed, make equable but efficient *pressure along* the spine; removing it immediately before rotation on the side; [the first measure augments the *ex*piration, the second commences *in*spiration].

"*IV. To induce circulation and warmth—*

continuing these measures.

"8. Rub the limbs *upwards*, with *firm pressure* and with *energy*, using handkerchiefs, &c.

"Replace the patient's wet clothing by such other covering as can

be instantly procured, each bystander supplying a coat or a waistcoat.

"Meantime, and from time to time—

"*V. Again, to excite inspiration.*

"10. Let the surface of the body be *slapped* briskly with the hand; or—

"11. Let cold water be *dashed* briskly on the surface, previously rubbed dry and warm.

"The measures formerly recommended and now rejected by me, are—removal of the patient, as involving dangerous loss of time; the bellows, or any *forcing* instrument, and the warm bath, as positively injurious; and galvanism and the inhalation of oxygen as useless.

"The inhalation of dilute pure ammonia has in it more of promise."

ART. 44.—*On Jugular Venesection in Asphyxia.* By Dr. STRUTHERS.

(*Edinburgh Medical Journal*, May, 1856.)

A paper on this subject was read before the Medical and Chirurgical Society of Edinburgh, March 19th, 1856, by Dr. Struthers. The object of the paper, which was illustrated by preparations and drawings of the valves in the cervical veins of the human subject, was to ascertain whether distension of the right side of the heart could be relieved by opening the external jugular vein in the human subject. The experiments of Drs. John Reid, Cormack, and Lonsdale, had satisfactorily shown that, in the lower animals (dogs, cats, and rabbits), the right side of the heart could be thus disgorged so as to restore its action, which had been arrested by a simple mechanical cause, over-distension. He considered that the indication of restoring the heart's action by jugular regurgitation, had not received that attention which Dr. Reid's suggestive paper demanded for it. Dr. Struthers described the anatomy of valves which he had found in the cervical veins, as well as those usually alluded to as present in the external jugular. A pair of valves at or within the mouth of the internal jugular vein; a pair in the subclavian vein immediately external to the point of union with the external jugular; a pair at or within the mouth of the external jugular; a second pair in the course of the external jugular, at the upper end of its sinus, or large portion, about an inch and a half above the clavicle, and various lesser valves at the mouths or within the tributaries of the external jugular. The varieties, and relative position of the two portions of each pair of valves was described, as he had found them in numerous careful examinations. With the view of ascertaining whether regurgitation could take place notwithstanding these valves, Dr. Struthers performed a series of experiments on the dead subject. A pipe was fixed in the femoral vein, and tepid water thrown freely upwards. The general result was, that the external and other jugular veins very soon became distended, and that when the lancet opening was made, at about an inch above the clavicle, the fluid regurgitated freely. At first a jet came, emptying the distended sinus, and then it continued to flow, never in a jet, but in an active stream across the neck, escaping by the wound with a wriggling

motion, evidently due to the obstruction offered by the valve which it had overcome. Care was taken to ascertain that the fluid came by regurgitation, not from above; but, if allowed, it also came freely from above, having ascended by the internal jugular. The introduction of a probe so as to hold aside the guardian valve of the external jugular did not much accelerate the regurgitating flow. When the catheter was introduced, however, the fluid came very freely by it—as freely as from a distended bladder. It is easy to introduce a common male catheter to the vena cava or right auricle, by directing it backwards and inwards, as well as downwards, from the point of venesection. But as soon as the catheter has entered the subclavian vein, the fluid comes as freely as when it is pushed farther. As soon as the point of the catheter is withdrawn into the external jugular, the fluid ceases to come by it. In one subject the fluid could not be made to regurgitate. This was at the time attributed to the circumstance that the cranium had been opened for the removal of the brain, the fluid pouring out by the cranial sinuses; but, on dissection, two pairs of valves were found in the external jugular below the lancet opening, besides the pair above it, as usual. Regurgitation seems to be prevented by two pairs of valves, though one pair may be overcome. In these experiments the veins of the arm did not become distended, and no regurgitation took place from a lancet opening in the axillary vein, although afterwards it was seen that only two pair of valves had stood in the way, between the heart and the opening. By "pair," Dr. Struthers meant the two separate portions which act together as one valve. He (Dr. Struthers) drew the following conclusions: 1. No venesection can be of any use in asphyxia, except in the neck, on the principle of regurgitation; which, however, may also relieve congestion of the head. 2. That, besides warmth and friction, and (the most simple and effectual of all means) continued artificial respiration by alternate compression and relaxation of the sides of the chest, jugular venesection should be tried. 3. With reference to Dr. M. Hall's recent recommendation of the prone position, to prevent the tongue falling back and closing the glottis, the question occurred—Does the tongue fall back, under passive circumstances, in the supine position? Is not the closing of the superior glottis, under all circumstances, a muscular act—both the carrying down and back of the tongue and epiglottis, and the lifting upwards and forwards of the larynx? The mouth, however, should be cleared of frothy mucus. 4. That to obviate the evident risk of entrance of air into the veins, the wound should be closed as soon as regurgitation is about to cease, and artificial respiration be then commenced; the jugular venesection having been performed as early as possible.

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 45.—*The Physical Signs of Adherent Pericardium.* By Dr. ROBERT LAW, Professor of the Institutes of Medicine in the School of Physic, Ireland.

(*Dublin Quarterly Journal of Medicine*, Aug., 1856.)

This sign is "*the persistence of the same extent of dulness to percussion in the præcordial region, no matter what position the individual may assume.* The area of dulness on percussion in the præcordial region will be the same under every varying position of the body. The heart becomes so braced up that it cannot move as it does in its normal state, when, if examination be made, the patient either lying, or sitting, or standing, the results of percussion will vary accordingly, the dulness being greater in the first position, and less in the two latter. The individual himself, also, is quite conscious of the existence of some solid resisting body within his chest, which does not move in the changes of posture of his body, but impedes its motion.

"I have proved this sign in cases where I have seen the patients all through their attack of pericarditis, and also in cases where the adhesion had been already formed, and have never found it to disappoint me. I, therefore, claim for it that it is *the physical sign* that may be relied on in proof of an adherent pericardium."

This quotation is taken from a paper upon pericarditis.

ART. 46.—*On the origin of "Bruits Vasculaires."* By Dr. TH. WEBER.

(*Archiv für Physiolog. Heilkunde*, t. 14, p. 40, 1855.)

Dr. Th. Weber has published a memoir of considerable length on 'Bruits vasculaires,' in which he shows experimentally—

1. That the bruits which are perceived in tubes traversed by a fluid, depend upon the vibrations of the walls of these tubes, and not upon the friction of the fluid particles upon those walls.

2. That these bruits are more readily produced in tubes whose walls are thin, than in tubes whose walls are thick, and more readily in large than in small tubes.

3. That these bruits are more readily produced by water than by milk; more readily by milk than by a mixture of water and blood; more readily by diluted than by pure blood.

4. That the production of these bruits is favoured by any constriction of the tube, because this constriction necessitates a quickened current at the part.

5. That a certain velocity in the moving current is necessary to the production of these bruits.

6. That these bruits are principally propagated by the parietes of the tubes.

Among other remarks, the author is disposed to refer the placentary murmur to pressure upon the large arteries in the neighbourhood of the uterus—the external iliac, the common iliac, the hypogastric, or the abdominal aorta: and, occasionally, to pressure on the large veins. He found in each case examined by him, that the murmur disappeared when the patient inclined slightly forwards.

Art. 47.—*On Capillary Emboli.* By Professor Rudolph Virchow.

(*Virchow's Archiv*, bd. ix, 1856, p. 307; and *Dublin Quarterly*, Aug., 1856.)

"After I had, in my first Essay on Acute Inflammation of the Arteries (Archiv, i,. p. 272), established the theory of the obstruction of the larger class of vessels, by means of the entrance of plugs (emboli), a great void still remained in reference to the smaller arteries, and our apprehension of metastasis, as dependent on such obstructions of the more minute vessels, continued more or less obscure. Some later cases, which I have observed, point out the way in this direction also; and I will, therefore, now give a short notice on the subject.

"The first case was that of an individual, æt. 55, affected with very decided albuminuria, who had latterly been rather soporous, and, seven days before death, which ensued on the 24th of December of last year, had suddenly become amaurotic. On post-mortem examination, the so-called metastatic, or pyemic ophthalmia, which has been recently and very faithfully described by H. Meckel ('Ann. des Charité-Krankenh.,' ii, 276), was found to exist in a very remarkable degree. The choroid, the retina, the vitreous humour, the zonula, and the lens, were filled with white opacities; the retina, besides, was studded with numerous ecchymoses, partly resolved and softened. Microscopic examination gave the same result as Meckel had obtained, namely, partly young purulent elements, partly granular and fibrillar infiltrations of the tissues.

"Similar conditions also existed in the kidneys, and were found of older standing in the spleen. But nowhere was a primary purulent or ichorous spot found; only in the heart were there considerable changes in the auriculo-ventricular and aortic valves, as well as of the endocardium on the septum, with very extensive degeneration of the arteries. The diseased portions of the left ventricle, especially those on the septum, were rough, swollen, superficially softened, and covered with brittle masses, which, under the microscope, were seen to consist of dense, amorphous, highly granular, yellowish-looking lumps. To what, then, could the metastases be owing? After long investigation, I at last succeeded in discovering, in the capillary vessels of the retina, the same amorphous, granular, yellowish masses, of similar chemical constitution, too, as I have mentioned as having been found in the heart.

"Still more conclusive was the same condition, as it existed in a

woman, æt. 27, who died in childbed, of endocarditis, on the 10th of January of the present year, and in whom similar changes had taken place on the mitral valve. In this case my attention was first attracted by the emboli of the fine branches of the coronary artery of the heart, which could be recognised even with the naked eye, and had produced an acute yellow softening of the muscular structure. I then found numerous hemorrhagic knots in the spleen, in which the endocarditic emboli could, with great constancy, be traced into the penicilli (arterial tufts?). Further, I succeeded in observing, in small ecchymotic foci of the kidneys, both little arteries and isolated loops of glomeruli filled with them. Lastly, Professor H. Müller, accidentally, had the eyes cut out for demonstration, and here again was found that metastatic endophthalmia, caused by little plugs in the vessels of the retina and choroid.

"The theory of pyemia has thus again been deprived of a portion of its dominion. The hemorrhagic inflammations of the spleen, the kidneys, and the eye, are connected with emboli; and as we have to distinguish the *apoplexia embolica* from the *apoplexia sanguinea cerebri*, so must we, in future, consider a certain number of the cases of pyemic and uremic amaurosis as embolic."

ART. 48.—*On Arterial Plugging in the Horse.* By the late Mr. JOHN BARLOW, Professor of Anatomy and Physiology in the Veterinary College, Edinburgh.

(*Edinburgh Medical Journal*, June, 1856.)

These remarks occur in the form of a private note written to Dr. W. T. Gardner a short time before the writer's death. They were presented by Dr. Gardner to the Medical and Chirurgical Society of Edinburgh.

"I have recently met with a few instances in which arteries of considerable size have been almost entirely plugged up with fibrinous clots, firmly adherent to their walls. In these cases during life, there was sometimes visible but unexplained atrophy of certain muscles, in regions specially supplied by such vessels; and sometimes when a main trunk, such as the aorta posterior, became thus plugged, there was palsy of the hind parts (of course I speak of the horse). At first I fancied these things to possess no material interest, and did not preserve the vessels. However, this day week, a pony, greatly disabled behind, but not completely paralytic, was brought for dissection. I found a large plug of adherent fibrin in the aorta posterior just where this vessel divides into the two iliacs on each side. (In the horse, you will remember, there is no "common iliac," but the aorta posterior divides into the internal and external iliacs.) This plug was firmly adherent to the roof of the artery, that is, to that part lying in contact with the vertebræ. It was not sufficiently large to obstruct the stream of blood completely, but it must have caused a material lessening of the stream. The internal iliacs, however, were *completely* plugged up, and the outside of the fibrinous clot was

adherent to their walls—in many places all the way round. In one place especially, a calcifying process is taking place in the coagulum."

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 49.—*On Simple Ulcer of the Stomach.* By M. CRUVEILHIER.

(*Archiv. Générales de Méd.*, April, 1856.)

In this memoir, which was read before the Académie des Sciences in January last, the principal conclusions are these:

1. Simple ulcer of the stomach (true ulcerative gastritis) may always be suspected, and almost always diagnosed with certainty.

2. The diagnosis of this affection is founded upon the differences which separate it from gastralgia and the non-ulcerative form of gastritis on the one hand, and from cancer of the stomach on the other hand.

3. Simple ulcer of the stomach is distinguished from idiopathic gastralgia by the permanency of the symptoms, and by the alternating exasperation and remission of these symptoms, while gastralgia will often occur suddenly, and leave suddenly and completely. Gastralgia, moreover, is quickly calmed by opium.

4. Simple ulcer of the stomach is distinguished from non-ulcerative gastritis, as well as from gastralgia, by black vomitings and stools.

5. It is certainly probable that these black vomitings and stools may be absent, and in that case it would be extremely difficult to diagnose between simple ulcer of the stomach and non-ulcerative gastritis.

6. Black vomitings are not characteristic of simple cancer of the stomach; on the contrary, they are common to this affection, and to simple ulcer.

7. A similar remark applies to the black stools, which are also common to gastrorrhœa.

8. Black vomitings and stools are in one sense more nearly connected with simple ulcer of the stomach than with cancer of the stomach; for they may happen at all periods of the history of simple ulcer, and frequently they are the first symptom. On the other hand, they are often altogether absent in cancer of the stomach, and when they do occur, it is generally towards the close of the case.

9. The diagnostic differences between simple ulcer and cancer are: 1st (*as to physical signs*), absence of tumour in simple ulcer; 2d (*as to pain*), pain is frequently absent in cancer, but never in simple ulcer of the stomach; 3d (*as to the character of the pain*), in simple ulcer there is a sensation of a raw wound, of burning or gnawing in the situation of the scaphoid cartilage; in cancer, cramps or spasmodic contractions, with hardness of the stomach.

10. The main point of diagnosis between simple ulcer and cancer of

the stomach is, however, the different effects of dietetic arrangement, for these fail altogether in cancer, and answer admirably in ulcer.

11. The grand difficulty in treating ulcer of the stomach is to find the food which can be digested without pain, and when this is once found the cure is speedily accomplished.

12. In the great majority of cases a milk diet is the only diet which can be borne. This diet seems to act specifically, but its specific action is in reality dependent on its harmlessness.

13. In short, in the treatment of simple ulcer of the stomach, pharmaceutical measures, properly so called, either internal or external, can only be considered as having a secondary degree of importance.

Art. 50.—*On Obstruction of the Bowels.*

By Dr. Ranking, Physician to the Norfolk and Norwich Hospital.

(*Medical Times and Gazette*, Aug. 2, 1856.)

[The following remarks upon intestinal obstruction were made in a clinical lecture delivered at the Norfolk and Norwich Hospital, on a case of obstruction of the bowels. The obstruction in this case (which was that of a man named Giles, 64 years of age) was in the upper part of the rectum, upon a level with the promontory of the sacrum. At this point the bowel was contracted so as barely to admit a full-sized catheter. The stricture had originated apparently in the gradual contraction of an old ulceration. Ordinary treatment failed; the indications for extraordinary treatment were not sufficiently certain; and the patient sank. Using this case as a text for some general remarks on intestinal obstruction, Dr. Ranking says:]

The various forms of intestinal obstruction may be conveniently arranged under the following heads:

1. Simple enteritis.
2. Impaction by fæces, or other solid formations.
3. Narrowing of the canal from disease within the bowel.
4. Pressure of tumours external to the bowel.
5. Displacement of a portion of the bowel, causing it to twist itself upon another portion.
6. Incarceration of a portion of bowel in a loop, formed by false membrane, or adhesions, or in some abnormal opening.
7. Invagination or intussusceptio.

1. Simple enteritis, or inflammation of the bowels, is usually, but not always, attended by constipation, which purgatives, if given in ignorance of the true nature of the case, fail to overcome. In this case the obstruction is due to the inability of the inflamed bowel to propel its contents; it allows itself to become distended. The transition from inflamed to healthy bowel is in some of these instances very marked, the upper portion being distended, congested, and even gangrenous, while the lower portion is abruptly pale, empty, and contracted.

2. The usual cause of obstruction from impaction is by the presence of hardened fæces, but in some instances concretions of other kinds

take place, and complete obstruction has been known to be caused by a large gall-stone. Dr. Watson relates such a case in his lectures.

3. Narrowing of the bowel from internal disease is the result either of chronic inflammation, with ulceration and interstitial deposit, or of cancerous degeneration of the coats of the bowel. Giles's is an instance of the former disease. The stricture thus induced may occur in any part of the intestinal tract, but is most commonly found in the rectum, and within reach. This is specially the case with reference to cancer, for of 378 fatal cases from this cause, in 221 the disease was located in the lower bowel.

4. Obstruction from tumours pressing on the bowel from without is comparatively rare, but cases are recorded in which such a result has been induced by large malignant tumours, and by a retroverted uterus.

5. Strangulation from simple twisting of the bowel upon itself is also rare, but several cases are on record. I have myself met with two marked instances, one of which I related some years ago to the Pathological Society; the other has recently occurred. In both the descending colon had turned over upon itself, producing fatal obstruction. Two cases are also related by Mr. Mackenzie in the 'Medical Gazette,' in which the colon was similarly dislocated. Now and then, also, an analogous displacement takes place in the small intestine, in consequence of a preternaturally deep mesentery.

6. The sixth variety of internal strangulation of the bowel is more common. It has occurred to me to see several cases, and an instance you lately witnessed in this hospital was one. The more common appearances found are a band of false membrane, the result of some former attack of partial peritonitis; an adhesion of the free extremity of the appendix vermiformis, giving rise to a noose through which the bowel slips; or a rent or congenital fissure in the mesentery or diaphragm.

7. The last form to be mentioned is intussusceptio. In this case one portion of the bowel slips into the portion below it, as may be imitated in the finger of a glove. The portion thus inverted is sometimes of considerable length, and when it gives rise to a tumour perceptible through the abdominal parietes it is called a volvulus.

There is a great difference in the relative frequency of these several causes of intestinal obstruction, as may be seen in an analysis made by Mr. Phillips in an admirable paper published in the thirty-first volume of the 'Medico-Chirurgical Transactions.' He has here collected 169 cases; and of these 69 were instances of invagination or intussusceptio; 60 of strangulation by the constriction of bands, adhesions, and abnormal openings; while 19 only were caused by disease of the coats of the bowel; 11 by impaction of hardened fæces or concretions; and 16 from the pressure of tumours external to the bowel.

Whatever be the cause which offers impediment to defecation, a certain train of symptoms sooner or later ensues, though it must be added they do not follow any regular gradation or combination peculiar to individual lesions; hence the difficulty I have spoken of in deciding upon the exact seat and nature of intestinal obstruction. The first thing that usually attracts attention is pain; this is or is not

accompanied by vomiting, and it is found on inquiry that from a certain date there has been no action of the bowels. Day after day passes without relief being obtained; and the symptoms become more severe, the pain more constant, the vomiting more urgent, and eventually stercoraceous: the abdomen also becomes more and more distended, the pulse quickens, the countenance becomes haggard, and in fatal cases sooner or later symptoms of collapse ensue, and the patient sinks, retaining his mental faculties to the last. This is a description of an average case of ileus; but great variation is manifested in particular cases in the relative urgency of the several symptoms, and in their grouping. I will briefly consider these symptoms *seriatim*, and first of the *pain*.

This symptom is usually present in greater or less intensity, but in some few it is very unimportant, and cases may prove fatal in which there is neither spontaneous pain, nor great tenderness on pressure of the abdomen. In other cases it is the first symptom which excites alarm, and occurs often during some exertion, or after an indigestible meal. In such instances it is not uncommonly found that a portion of bowel has become strangulated, and the sudden pain would seem to indicate the precise moment in which the bowel has become imprisoned. In other cases there is little or no pain for some days, but it soon declares itself in connection with distension of the abdomen, and marks the occurrence and progress of the enteritis, which seldom fails to add to the fatal tendency of the mechanical obstruction. Towards the close of life, when gangrene ensues, the pain, as in idiopathic peritoneal inflammation, often quickly and entirely subsides.

The *constipation* is, in all cases of genuine obstruction of the bowels, complete; or if any fæcal matter passes, it is merely that contained in the bowel below the constricted point. In some cases of intussusceptio, bloody mucus passes, which, in children especially, will materially assist in forming a differential diagnosis.

The *vomiting* is a symptom subject to much variety. I have recently had a case under my care in which the obstruction was of fourteen days' duration, with immense distension, but vomiting did not once occur. This case proved fatal, without the patient once vomiting. The obstruction was in the sigmoid flexure. For the most part, however, vomiting is a very distressing symptom, and adds materially to the difficulties of medicinal treatment. At first it is simply the ejection of the ordinary contents of the stomach, but at some variable interval it becomes fæcal.

The *abdominal distension* likewise varies, both in degree and period of occurrence. In some cases, where the obstruction is high up, as in the duodenum, there is little or no distension; on the contrary, the abdomen becomes flat, or even retracted. Generally a tympanitic condition soon declares itself, and may proceed to an enormous extent, so that distended coils of intestine become perceptible to the naked eye.

The condition of the *urine* is thought by many, and especially by Dr. Barlow, to give important evidence as to the site of the impediment. Where it is copious, it is supposed to indicate obstruction of the lower end of the tube, and the reverse when it is scanty in quantity. Further inquiries are, however, requisite to establish this as a trust-

worthy symptom. The state of the circulation in intestinal obstruction fluctuates. The pulse may be unaffected at first, but rarely fails to sympathise with the gravity of the disease, in a rise of frequency and subsequent loss of power.

You will see, then, from what I have said, that there is considerable diversity in the symptoms of intestinal obstruction; it may be added, that this diversity is not limited to a diversity of intestinal lesions, but that the same lesion may in a series of cases manifest an equal discordance. Hence the extreme difficulty of determining, in many cases, both the nature and the seat of the obstruction; but this fact will be most forcibly impressed on your minds by reading to you the remarks of Mr. Phillips, who, in reference to the possibility of correct diagnosis, has analysed a large number of cases. He says—

"The impression which must be produced by reading the preceding cases is this—that, no matter what may be the cause of the obstruction, no remarkable difference is observed in the more prominent symptoms by which it is accompanied. There are in all abdominal pain, tension, constipation, and sickness; but in the mode of their occurrence it would be difficult to point out any distinct difference.

"The constipation may have the same characters, whether the obstruction be caused by hardened fæces, by contraction depending upon ulceration or other disease, or by bands or tumours—this is certain. The same may be said of sickness; it is usually distressing, and ends in fæcal vomiting, but it may be as obstinate in a case of invagination, as in a case of tight strangulation by bands, &c."

This opinion is very disheartening, but it is nevertheless true; and indeed you have so recently had an instance of its correctness in the case under one of my colleagues, that no more is required to convince you of the uncertainty in the differential diagnosis of these cases. Still it may be asked, are there not some broad landmarks, so to speak, by which we may arrive at an approximative diagnosis? I should answer in the affirmative, and tell you what they are, and how far they may be made available.

In reference, then, to the nature of the obstruction, I would say that where there is sudden pain and vomiting, with complete constipation, in a person previously healthy, and where the vomiting is an urgent symptom and the pulse quickly sympathises with the general disturbance, we are justified in presuming (in the absence of external hernia) that the cause is either intussusceptio or an internal strangulation, the result of the intrusion of a portion of bowel into some abnormal opening in the mesentery, or into a noose produced by a band of false membrane. In such a case, our presumption would be strengthened if there was the history of former attacks of partial peritonitis likely to have produced false membranes. This, however, is all we can say. Between intussusceptio and strangulation by bands, I know of no means of deciding, unless the occurrence of bloody stools be considered sufficient. In relative frequency of occurrence in a given number of cases they are nearly equal.

On the other hand, when we have the history of prior disease of the bowels; one or more attacks of constipation overcome with more or less difficulty; when the symptoms, so to say, do not explode with so

much violence, but are more gradual in their accession, we should lean to the conviction that the cause is one which has produced gradual narrowing of the bowel, such as cancerous or other disease of its coats, or pressure by a gradually increasing external tumour. Now, reasoning thus, we should perhaps be right in many cases, but you are bound to know that in many also we should be quite wrong, so that in every instance the diagnosis of a case of obstruction cannot be approached with too much diffidence and caution.

As with regard to the cause of obstruction, so with reference also to its seat. Where you have actual tactile evidence of an obstruction, as in a stricture of the rectum within reach, there can be little difficulty in deciding the point; but where no such evidence exists, the question becomes one of the most difficult which can offer itself. We have to ask, is the obstruction in the large or the small intestines, and in which part? Now, taken in reference to the question of operation, the right decision is everything; we may save or prolong life, or we may uselessly perform a dangerous operation, as you have recently seen, accordingly as we interpret the evidence before us correctly or the reverse. The only help I can give you in this difficulty, and it is very small and liable to numerous exceptions, is founded on the following considerations:—"If we find a circumscribed tumour in any part of the abdomen, we may perhaps correctly draw the inference that there is the seat of obstruction; but we shall still hesitate between small and large bowel, volvulus and impacted fæces. If a flexible tube passes ten or twelve inches into the bowel, and a considerable quantity of fluid can be injected without returning, it will perhaps be judged that there is at least no obstruction within the descending and transverse colon; but even here a fallacy may exist, and did exist in the case of Giles; the tube may appear to pass, but in reality double upon itself in the rectum, or even it might have passed through in his case, as the stricture was not absolutely impervious, and thus be the very means of leading us astray. Again, it might be supposed that some assistance could be derived from observing the course of the coils of intestine when these are visible through the abdominal parietes. For instance, if a marked prominence with tympanitic resonance existed transversely across the abdomen, and appeared to descend into the left loin, any one would be justified in pronouncing that there was a distended colon, and that the constriction must be below this. Yet how fallacious any deduction drawn on such premises may be, was shown in Dr. Copeman's case. Here, as you may remember, there was precisely this transverse prominence, thought by many to be the colon; and yet it turned out to be not the colon at all which was empty, but several distended coils of small intestines.

Among other supposed data for the localization of the seat of obstruction, I may mention the early occurrence and urgency of the vomiting when the constriction is in the small intestines, the scantiness of urine under the same circumstances, and the sensation of the patient of a passage of air up to a certain point and no further, and of enemata up to the same point in the opposite direction. All these may be occasionally of use, especially the latter, when present; but the ex-

ceptions are so numerous, that at best but a limited amount of confidence can be placed in them.

With reference to the treatment of intestinal obstructions in general, so much has been said when speaking of the course pursued in the case of Giles, that but little need be added.

Before any measures whatever are adopted, examine the usual seats of external hernia, the inguinal canal, the femoral spaces, and in females the vagina; the rectum should also be examined carefully.

In the majority of cases, when seen early, constipation is the prominent symptom, and the one which the patient is most urgent to have relieved. Purgatives may then form the initiative treatment in almost every case, and may be continued for two or three days, but not longer, as, should they fail after so long a trial, you may feel assured that the obstruction is such as they will not overcome, and is probably mechanical. Once that this conviction is justified, purgatives should be abolished, and other measures adopted of a temporising nature. Injections, carefully given, may be continued, and should be given with a tube passed as far as can be accomplished. Calomel and opium, one grain of each, may also be given every two or three hours, or opium alone. If the patient is robust, and there is marked abdominal tenderness, blood may be taken from the arm, or leeches applied to the abdomen. The strength will require sustaining as well as the vomiting will permit, and, after a few days, the exhibition of stimulus and opium comprises nearly or quite all that can be done internally. But if the case progresses unfavorably, in spite of everything, what is the next step? is the patient to be allowed to die, or are we to endeavour to save or prolong his life by operation? This is a question very difficult of decision, on account of the uncertainty of the exact seat of obstruction; and without a tolerable assurance of this point, to open the bowel will be to add one more element of fatality to those already existing. It is clear, then, that before contemplating operative interference, every precaution to ensure a correct diagnosis must be taken; should this fail to enlighten us as to the precise point of obstruction, I do not think any operation is to be countenanced; but if we are certified that the constriction is at a point above which the bowel can be safely opened, we have then to decide which of the several proceedings is to be adopted.

Art. 51.—*On the use of Chloroform in Lead-colic.* By M. Aran.

(*L'Union Médicale*, Jan., 1855.)

In M. Aran's opinion—and this opinion is supported by an experience embracing twenty-five cases, and extending over four years—chloroform is by far the most efficacious remedy in the treatment of lead-colic. In the earlier days of the severer cases, the chloroform is used topically; but it is upon the internal use of the remedy, either by the mouth or in the form of an enema, that M. Aran places his confidence. The plan is to keep the patient continually under the influence of the remedy by repeated small doses, which together, in the course of the

day, mount up to from 60 to 300 minims. The quantity used in an enema varies from 30 to 50 minims. The chloroform is suspended in water by means of tragacanth. M. Aran perseveres in this treatment for several days, gradually reducing the dose, and always continuing the enemas for some time after having given up the draughts.

Art. 52.—*The cause of Hepatitis among Europeans in India.* By Mr. Waring.

(*Indian Annals of Med. Sci.*, April, 1856.)

The comparative exemption of children and women from hepatic diseases in India affords a strong presumption as to the real cause of these affections among the men. This exemption is shown in the following table, a table which we take from a paper already referred to, entitled 'Notes on the Diseases of India:'

Table

Showing the Admissions and Deaths from Hepatitis amongst the Europeans connected with the Madras army in seven of the largest stations. during a period of ten years, viz., 1829-38 *inclusive.*

Classes.	Strength of each Class.	Admissions with Hepatitis.	Deaths from Hepatitis.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Per cent. of Deaths to Admissions.
Privates . . .	75,121	8111	517	10·8	0·68	6·37
Officers	2319	244	8	10·5	0·34	3·28
Women	6559	287	13	4·3	0·19	4·52
Children . . .	9877	36	4	0·3	0·04	11·11

Nor can this frequency of hepatic affections among European male adults be ascribed to the heat of the climate primarily and principally. This is seen in a return compiled from official sources, showing the deaths from hepatic disease in the twelve largest jails in the Madras Presidency—

TABLE.

Jail.	Period of Observation.	Aggregate Strength of Prisoners.	Admissions with Hepatitis.	Deaths from Hepatitis.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Admissions.
Masulipitam . . .	10 years.	3863	1	0		
Rajahmundry . .	10 „	1372	6	0		
Chiracole . . .	10 „	1673	1	0		
Tellicherry . . .	12 „	1191	1	1		
Calicut	11 „	2564	0	0		
Madras	10 „	2730	6	0	0·05	20·6
Bellary	9 „	*6362	2	0		
Cuddapah . . .	10 „	3905	1	0		
Nellore	10 „	5168	2	0		
Guntoor	10 „	5256	1	1		
Chittoor	10 „	4924	5	4		
Chingleput . . .	10 „	3067	4	0		
		51,775	29	6	...	...

Mr. Waring proceeds to comment upon these tables in this manner: "We have seen in a former section," he says, "that children are very exempt (though not to so great a degree as the native) from this form of disease, and we should be led to infer that those conditions or circumstances which cause the exemption in the one case may operate in the other. In what respects then do the conditions of the native and the European child approximate? In several it may be replied, in simplicity of diet, in the light and unrestrained style of dress, and, above all, in abstinence from stimulating and particularly from alcoholic drinks. It has repeatedly been suggested that a very high range of temperature and exposure to the direct rays of the sun operate in the production of hepatic disease in India, but the very fact of the native convict being so exempt from its invasion, tends to disprove any such idea, as, perhaps, there is no one class of persons in India who are so constantly, day after day for years together, exposed, whilst working on the roads, to the full influence of the sun's rays. So, likewise, with respect to sudden and great alterations of temperature, another alleged cause of hepatic disease. The Indian convict, perhaps, more than any other class of persons, is exposed to these, often working for some hours in the full heat of the sun, and, before his return to jail, deluged with rain—and yet we see not above 5 in 10,000 are attacked with hepatic disease.

"The native of India and the European child in India, as before observed, closely resemble each other in three respects: 1st, lightness, and an unrestrained style of clothing (thus allowing unchecked opera-

* This and the five following numbers include prisoners on trial as well as those convicted.

tion to the cutaneous function); 2d, in simplicity of diet; and 3d, in the practice of temperance. It appears to me that in the direct ratio as a person in India departs from either of these conditions, especially the third, temperance, so are the chances of his becoming affected with hepatic disease increased. Next to the native and the child, we see that women are exempt from hepatic disease. They often depart from the above conditions, particularly as far as dress and temperance are concerned, but rarely, if ever, to so great an extent as the officer and private soldier, who, for the most part, lead a life as diametrically opposed to that of the child and native, as it is well possible to conceive, and these are subject to hepatitis in an extreme degree. Rigid temperance *per se* is, however, no absolute preservative against the invasion of disease of the liver in India, and this leads us to consider in the next place—

TABLE

Showing the Admissions and Deaths from Hepatitis among Teetotallers, the Temperate, and the Intemperate, in six European regiments serving in Madras in 1849-50.

Class.	Strength of each Class.	Admissions with Hepatitis.	Deaths from Hepatitis.	Per cent. of Admissions to Strength.	Per cent. of Deaths to Strength.	Per cent. of Deaths to Admissions.
Teetotallers . . .	450	26	0	5·777	...	...
Temperate . . .	4318	249	16	5·766	0·370	6·421
Intemperate . . .	942	96	2	10·191	0·212	2·083

"These figures are too small and the data too limited to permit us drawing conclusions of any weight or value. It is, however, worthy of remark, that double the proportionate number were admitted of those who were known to be intemperate over those who were either teetotallers or persons of known temperate habits."

ART. 53.—*On a new species of Tænia in the human body.* By Dr. RANSOM, Physician to the General Hospital near Nottingham.

(*Medical Times and Gazette*, June 14, 1856.)

In the summer of 1852, while engaged in observations on the entozoa of domestic animals, Dr. Ransom was led to examine the fæces of cats and dogs, to ascertain if they contained any ova of nematoid worms, and whether, therefore, it was worth while to kill the animal in order to obtain the worms. A very natural suggestion sprang from this, viz.:—that he might in the same way diagnose the existence of *Ascaris lumbricoides* in man. Very few suitable cases, however, presented themselves, and, for a long time, he could not

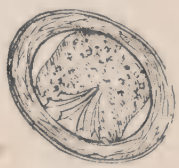
apply the idea. While examining the fæces of children, whose symptoms suggested the possibility of their being infested with that entozoon, he met with the following case in which the ova of a cestoid worm, differing from any hitherto described, were contained in the stools.

Case.—Ann Stead, æt. 9, child of poor parents, resided all her life at Old Radford, in a low, damp situation, near a mill dam; engaged in nursing an infant. Father and mother living; natives of this neighbourhood, and have never been out of England. The child has always been delicate, but never laid up with any serious illness; her diet has not differed from that of other members of the same family, or from that of other poor persons of the district; she has, however, been fond of fruit and vegetables, especially of raw cabbage. American flour has been used by the family, and a little raw bacon has been eaten in the house.

In March, 1854, she began to complain of faintness and weakness early in the morning, with an indisposition to rise. She was treated by a druggist with purgative medicines, which were intended to bring away worms, but did not. She became weaker; lost flesh, strength, and colour; the appetite was capricious; and she had occasional pain in the left side. She had no vomiting or nausea, convulsions or itching of the seat or nostril; had not a ravenous appetite, or gnawing pains in the abdomen; never passed joints of tape-worm, or any seat-worms or round worms.

July 11th.—Consulted me, complaining as above. She was a thin, pale, badly nourished child, with some congenital deformity of the thorax. I directed some of the stool to be sent for examination, and found in it a considerable number of clear, thick-shelled oval eggs, of a cestoid worm. One of these measured $\frac{1}{685}''$ by $\frac{1}{543}''$, and another $\frac{1}{606}''$ by $\frac{1}{492}''$, so that the long diameter but little exceeded the short. The shell was marked by a delicate, concentric, irregular striation, as if it were made up of fibres; in the cavity lay a rounded, nearly transparent, finely granular embryo, not quite filling the space; and in the substance of the embryo, collected to one portion of its periphery, were imbedded three pairs of hooklets, arranged as in fig. 1.

Fig. 1.



Seen with $\frac{1}{4}$ objective, drawn without a camera—Ovum of a species of Tænia from the fæces of A. S.

There could be little doubt that these were ova of a cestoid worm of the genus Tænia; but they were distinguished at once, by their greater transparency, from the ova of *Tænia solium* or *Tænia mediocannellata*, as well as from those of *Bothriocephalus latus*. The stool contained also a few ova of *Trichocephalus dispar*, very numerous spores of the *Uredo caries*, and the usual undigested residue of food.

A dose of calomel and scammony was given, and followed by half a drachm of ethereal oil of male fern. The whole of the copious evacuations which followed was examined without finding any worms. She continued, however, to pass the same ova in the stools.

August 11th.—I examined the stools of her sister Eliza, æt. 6 months, but found no similar ova: also the stools of William, æt. 7 years; Mary, æt. 11 years; Sarah, æt. 13 years; and Rebecca, æt. 14 years; her brother and sisters, were examined without finding any such eggs. During the following autumn and winter she continued to pass these ova in the stools, and though turpentine and other anthelmintics were administered, no worms or fragments of worms could ever be found on careful search. Simple vegetable bitters and careful diet were employed with the effect of improving her general

health; but as the ova were still present in the stools, she was admitted into the General Hospital, Nottingham, May 19th, 1855, at which time she declared herself well in health, but the fæces still contained the peculiar ova. The diet was limited to milk and farinaceous matters. She was treated first with kousso, which was at once expelled, by vomiting, and another dose shared the same fate.

May 31st.—Oil of male fern was given, and, to prevent sickness, which had on a former occasion been excited by this remedy, it was administered in gelatine capsules. She took altogether ten capsules in six hours, said to contain each twenty minims, but probably not holding quite so much. She was freely purged, the stools being slimy, and the mucus faintly tinged with blood; but no uneasy sensations were produced. After a very careful search in all the stools passed, no worms or fragments of them could be found. For a short time she was then put on ordinary hospital diet, and left to rest.

June 10th.—She passed unexpectedly a large *Ascaris lumbricoides*, which on examination proved to be a female, but contained in its uterus only unripe ova with imperfect shells.

20th.—Having first ascertained that the ova were still present in the fæces, she was ordered an electuary of dolichos pruriens. The motions were carefully watched till June 30th, but no worm came away.

July 2d.—Having again ascertained that the ova were still present in the stools, 1½ oz. of decoction of pomegranate was given every two hours for three days, but no worm passed in the stools.

7th.—All treatment omitted.

9th.—She passed three individuals of *Ascaris vermicularis;* in the uterus of one of these numerous nearly ripe ova were found, but they could not be confounded with the cestoid ova.

July 14th.—Having again ascertained that the ova were still passed in the stool, an extract was administered, obtained by exhausting half an ounce of kousso with ether, spirit of wine, and water successively, and mixing all the results. (As the proper menstruum of the active principle of kousso is not known, at least to me, this plan was adopted to ensure the activity of the extract.) A dose of castor-oil was given after the extract, which caused no sickness, but no worm was passed.

After this she lost patience, and left the hospital; but on examining the stools sent to me afterwards, September 6th, the ova were still present as before.

Remarks.—"On considering the facts here stated, it will, I think, be fair to conclude, that a tænia infested this child, and continued during fifteen months to discharge its ova into the alimentary canal; for although it might be possible to admit that, occasionally, tænia ova might find their way into the intestines with the food, and then pass away in the stools without developing themselves in the parenchymatous organs as cystic entozoa, yet it will hardly receive credence that such accidental admission of ova with the food should continue for fifteen months in one member only of a large family, and under varied circumstances as to diet and locality. This must be a new species of tænia, as proved by the characters of the ova, and rendered probable by the inefficacy of the remedies known to be effectual in the expulsion of other cestoid worms. Without expressing a very strong opinion, I am more inclined to think that it inhabits one of the glandular ducts communicating with the intestinal canal, and thus

escapes the action of the vermifuges, than that it really resists their action by reason of its specific peculiarities; for it will be remembered that male fern and kousso are efficacious vermifuges for all the known species of tape-worm.

"This new species of tænia, of which I have ventured to assert the existence, from the examination of the ova alone, is peculiar in another particular, viz., that it casts off the ova separate from the segments, and they appear free in the fæces, while the *T. solium* and *T. mediocannellata* both throw off their segments entire when ripe, and but few free ova appear in the fæces. The same I believe to be true of *Bothriocephalus latus*. In the dog, the *T. serrata* cast off ripe segments, as well as free ova, in the stools."

Dr. Ransom is of opinion that the presence of the ova of worms in the stools will be found to be a valuable means of diagnosis, not only of the presence of worms, but of the kind of worms, and of the kind of treatment necessary. He is also of opinion that the peculiar bodies which have been figured as cholera corpuscles, are these ova changed by the action of the fæces.

ART. 54.—*Fatty Degeneration of the Liver, &c., as the chief cause of mortality among European soldiers in India.* By Mr. MACNAMARA.

(*Indian Annals of Med. Sci.*, Oct., 1855.)

In 23 out of 24 cases examined by him, Mr. Macnamara found the liver, kidneys, and some other organs, in a more or less marked state of fatty degeneration, and this fact he seizes upon as accounting for the high rate of mortality among the European troops in the H.E.I.C. in Bengal. In the earlier stages these organs were infiltrated with fatty matters; in the later stages this infiltration had encroached upon the normal tissues, so as to constitute degeneration.

This state of things is referred by Mr. Macnamara to the mode of living, and not to the climate; and this is rendered evident enough by what is stated of the mode of living. First of all the men have too much to eat. "The Company's allowance is to each man per diem, one pound of bread, one of beef, a quarter of a pound of rice, and half a pound of vegetables, and to this over-liberal allowance the men add themselves one pound of meat (often the common bazar pork, and the meat they buy is always of an inferior quality, as they pay no more than at the rate of two rupees for a sheep), and one pound of vegetables, and often rice also. So that each man consumes, on an average, 76 ounces of food per diem; whereas a man in the Royal Navy, during the same period of time, eats but 35 ounces, and yet he is in a service that compels him to take a large amount of muscular exercise in the open air, while the man in the 1st European Bengal Fusiliers is in a situation which, unless he be on active service, requires him to make but little muscular exertion; and he is, moreover, exposed to the influences of a climate which, from its very nature, would compel him, if he wishes to preserve his health, to live in the most moderate way possible."

Then the habits are most unsuited to persons who have too much

to eat. "After sleeping through the night in the very hot close air of the barracks, he rises at gunfire and goes to parade, after which he commonly employs himself in cleaning his accoutrements till breakfast time, 8 o'clock; this meal over, he lies down on his couch, and sleeps till dinner time, and after dinner he generally retires to his bed again, and sleeps, more or less, till 5 o'clock, the temperature of the barracks being frequently as high as 104° at this period of the day. I mention this particularly, because it is after taking food that the lungs are most active; if therefore heat and sleep diminish their activity, we see at once how small an amount of carbon will be exhaled by them at the very time when their functions should be less impeded than at any other time; about 5 o'clock the private has to prepare himself for parade; this over, he saunters about till half-past 9, and then turns in for the night. Of course there are a few exceptions to this, some half-dozen or dozen men taking active exercise every day, and these few are invariably found to be the most healthy men in the regiment."

Again, the fact that a great part of the day is spent in darkened barracks, and that spirits are drunk with considerable freedom, must also favour greatly this disposition to fatty degeneration.

The memoir closes with these comments:

"It is to the eradication of this excessive eating, sleeping, and drinking, combined with want of exercise, the effects of which I have endeavoured to show must, in this climate, produce disease of the liver, &c., that I wish to draw the attention of the profession, as they have indirectly the power of removing these abuses, and if they exert this power, I am sure that their exertions will be well repaid by a great improvement in the health of the men intrusted to their charge. Well did Cornaro say of the Italians some three centuries ago, 'Dost thou not see that gluttony is killing every year more people than would perish in a season of most severe pestilence, or by the fire and sword of many battles;' and this is but too truly applicable to the case of European soldiers in India. I have shown that these men are gluttons in the strictest sense of the word, being just the reverse to those who live a sober life, viz., those 'who make a moderate use of meat and drink, such as accords with the temperament, circumstances, and actual disposition of the body and mind.' Nearly half the men in the regiment are Irish or Scotch; most of whom, before they left their native shores, had never tasted fresh meat; they had also, from the force of circumstances, been obliged to live a sober life; and well would it have been for them had that necessity followed them to India. I have seen death seize its victims in many ways, and under various circumstances, but never have my feelings been so moved by it, as when watching one of these fine young fellows, miles from home and friends, carried off by disease, which I am convinced was caused by his own imprudence, or by ours, for having allowed them to act so imprudently. For instance, an Irish boy comes to India full of health and spirits, he has, as I above observed, seldom if ever tasted meat, and having been 'a poor man's son, has never had the chance of getting drink;' this lad comes up to join the regiment at Dinapore, he takes to eating three pounds and upwards of solid food in the day;

and I am told by his companion that he does not remember to have seen him sober one night since he joined the regiment; the consequence is that he is seized with dysentery; perhaps he recovers, but from a continuance in the same mode of living he is quickly attacked with the disease again, and this time he is carried off. Such, I am sorry to say, is not an uncommon history.

"In this paper I have endeavoured to prove that disease must result from the effects of such a mode of living in this country. The cause of the disease is simple and definite, and there can be no reason why it should not be removed, and diet surely might be restricted, and excessive drinking in a measure put a stop to, and, what would also greatly tend to keep the men in health, their food might be better cooked;—at present their culinary arrangements are sadly deficient. How much good a little care and attention would effect in this department, simple and insignificant as it may seem, no one with any knowledge of the process of digestion can for a moment doubt. We need not, however, apply to the physiologist even to prove this, for so strong does experience bear on this point, that even amidst the din of war, we find Lord Paulit, a brigadier-general, giving M. Soyer a testimonial to the effect that 'he approved of the good things that he (M. Soyer) had made out of the usual provisions for the patients in the hospital, and, he adds, I could not have believed that such a difference could have been produced only by arrangement, and a really simple art of cooking, and a proper organization of proportions.' From this we may learn that not only is management in cooking economical, but that it is feasible in a foreign country in the time of war; surely then there can be no reason to prevent a similar plan being adopted in the military stations of India. In addition then to alterations in their diet, and the sanitary arrangements of the barracks, we may assume that a change in the mode of cooking would be eminently beneficial to the health and comfort of the troops. When these changes have been made, the cause of much of the present disease among the men will have been removed, and then we may confidently expect that the lives of the men will be prolonged to as great a length as those of their officers. Vast indeed would be the improvement effected by the simple, though it might be at first expensive and troublesome process of improving the very sadly deficient sanitary condition of the barracks at Dinapore and elsewhere, as also by the general improvement of the diet roll of the troops. The lives of the men of this and other European regiments in India might be thus prolonged, and as the prolongation of human life is the aim of our profession, let us try to remedy these existing evils. We can, by so doing, aid in the prevention of a disease, which it is totally out of our power to remove when once it has taken hold of its victim."

Art. 55.—*On Suppuration in the Abdominal Parietes.* By Dr. Habershon, Assistant-Physician to Guy's Hospital.

(*Medical Times and Gazette*, May 17, 1856.)

Suppuration in the parietes of the abdomen is frequently presented to the physician as simulating deeper-seated mischief, and for a short time considerable obscurity may attend it—sometimes of an acute character, accompanied with considerable pain and febrile excitement, before inflammatory œdema of the skin has come on, and while the effused products are bound down by firm fascial investments closely resembling cæcal disease or local peritonitis; in fact, every region of the abdomen presents us with disease on the surface resembling deeper injury. In the hypochondriac regions suppuration connected with the costal cartilages or ribs simulates abscess of the liver, empyema, hydatids, diseased gall bladder, or corresponding disease of the spleen: the right or left iliac regions, affections of cæcum or sigmoid flexure; in the lumbar regions, renal or spinal disease; in the umbilical, strumous or cancerous disease, and pelvic cellulitis, &c., may be mistaken for ovarian or uterine disease, &c. This simple suppuration in the parietes generally tends to the surface, is opened or discharged spontaneously, and in many cases does well, unless connected with pyæmia or in cachectic subjects. The sooner it is evacuated the less likely is the pus to burrow among the flat muscles and fascia of the abdomen; and even in abscesses, fæcal or otherwise, extending secondarily to the parietes, unnecessary delay is sometimes made in discharging their contents. The correct rule is to open them very early.

Case 1.—*Suppuration external to the sigmoid flexure of colon: communication with the intestine and the anterior abdominal parietes.*—Elizabeth R—, æt. 39, a widow, who had supported herself by dressmaking, was admitted into Guy's under Dr. Habershon's care, March, 1855. Till a fortnight before admission she had enjoyed good health, when she felt pain in the back, which extended to the shoulders and knees. The greatest pain, however, was in the course of the ilio-hypogastric nerve. These symptoms were accompanied with considerable febrile excitement.

Saline medicines, with colchicum, &c., were prescribed. In a few days the pain, which had simulated rheumatism, ceased, and she appeared to gain strength under the use of decoction of bark with carbonate of soda.

On March 26th, three weeks after admission, she complained of pain in the left iliac fossa, and a firm tumour, about the size of a hen's egg, could be felt deeply in that part. There were no tenderness in the spine, numbness in the legs, or other symptoms of disease of the spine. An examination per vaginam was made by my colleague, Dr. Oldham, but did not give any evidence of disease of the ovary. The bowels were easily acted on by Hydrarg. cum Cretâ, by castor-oil, and by enemata; but this action did not affect the size of the tumour, or alleviate the symptoms. The urine was normal, and there was no indication of renal disease. The pain gradually increased in severity, but was considerably relieved by the repeated application of leeches, by taking iodide of potassium, bichloride of mercury, and occasional doses of morphia. It was believed that the disease consisted in disease of the sigmoid flexure of the colon, with local peritonitis.

May 10th.—The pain had returned with much severity, and hectic came on. The tumour increased in size; it could be felt extending to the quadratus lumborum; and also reached the anterior abdominal parietes, which, at the left iliac fossa, were red, œdematous, and exceedingly tender.

19th.—The bowels were acted upon three times freely, and a considerable quantity of purulent mucus discharged. The examination of this discharge could detect no cancer cells. The pain and hectic continued, the patient becoming pale and exhausted; the left thigh and leg became swollen and tender, afterwards the right; and there was excessive pain in the course of the femoral veins. Nourishment and stimulants were administered as the patient could take them. Quinine and opium, or morphia, were given.

June 8th.—The inflammatory œdema of the anterior abdominal parietes had increased. My colleague, Mr. Callaway, made an incision at this part, and more than a pint of exceedingly offensive pus was evacuated. Every means were used to sustain the patient; but the discharge continued abundant, and bearing feculent odour, and her strength gave way. Her tongue remained clean and moist; but her appetite ceased, so that she became quite unable to take food. There was no pain at the scrobiculus cordis, vomiting, or thirst; but emaciation and sense of exhaustion. Bed-sores formed on the sacrum; and, a few days before her death, cough, which aggravated her distress. She gradually sank, and died June 24th. Inspection was made twenty-four hours after death. The body was blanched, and the lower extremities œdematous; the pleura was healthy, but the posterior lobes of the lungs were in a state of red hepatization; the heart and its valves were healthy. *Abdomen.*—The peritoneum was healthy, except in the left iliac region, where the omentum, and several coils of intestine, were adherent. In this region was an abscess, situated behind the peritoneum and fascia, and containing offensive, feculent pus; it extended to the anterior abdominal parietes in front, above to the diaphragm and kidney, and posteriorly nearly to the spine. Very careful examination could detect no disease of the ileum or vertebra, or pelvic cellular tissue. The abscess communicated with the sigmoid flexure by three small openings, in close contact the one with the other; the edges not thickened, but valvular. The small and large intestines were otherwise healthy; and the opening into the intestine was evidently secondary. The uterus, ovaries, and kidneys were normal. The stomach was of normal size; the mucous membrane pale, and had undergone degeneration. The liver was more than 5 lb. in weight, and extremely fatty. The lower portion of the vena cava, and of the common iliac and external iliac veins, were filled with very firm, white, adherent fibrin, and the coats of the vein were much thickened.

The review of this case showed that the pain in the course of the ilio-hypogastric nerve arose from direct pressure upon that nerve by inflammatory effusion, that the tumour felt in the iliac fossa consisted of this effusion pushing forward the peritoneum and sigmoid flexure; that the subsequent symptoms arose from suppuration, and its extension in various directions inwards into the colon, leading to some extravasation of fæces and of pus into the alimentary canal, and into the abscess forwards, so as to reach the anterior parietes, where it was opened,—upwards to the diaphragm, and inwards to the cava and iliac vessels, which became involved and obstructed by fibrinous material. That it did not arise from diseased bone was proved by careful examination; and it appeared probable that some accidental blow had led to this suppuration, with its fatal results, or that irritation in the intestine had led to inflammation external to it, and subsequent suppuration.

After the tumour had been felt, evidence of suppuration soon arose, and the

discharge of purulent mucus showed that it had formed some connecting link with the intestine, or that there was ulceration of the coats of the intestine itself. Renal, ovarian, spinal, or parietal suppuration, or cancerous disease of the sigmoid flexure, might give rise to many of these symptoms. The absence of all indication of diseased kidney was shown in the condition of the urine. Disease of the spine was exceedingly doubtful, from the want of tenderness, numbness, and the course of the suppuration. The position which the tumour assumed, and vaginal examination, showed that the ovary was not involved. It appeared to arise from disease near to the sigmoid flexure, either commencing in that viscus and extending outwards, or beginning in the parietes and making its way into the intestine. It was in deciding as to which of these might be the case, that the principal difficulty consisted. The discharge of purulent mucus from the intestine, and the feculent character of the pus, indicated a connection between the abscess and the intestine; the inspection after death showed that the reverse was the case. Before death, I was led to believe that the disease commenced in the sigmoid flexure, and that the suppuration external to the intestine was secondary. It was closely allied to cases of suppuration external to the rectum, but so deeply was it situated that any exploratory incision would have been unjustifiable, till there was more certain evidence of suppuration than was presented at the commencement of the disease.

Case 2.—*Abscess in the loins; feculent-smelling discharge; pleuro-pneumonia, with feculent-smelling sputum; recovery.*—T. H—, æt. 34, was admitted into the Clinical Ward, under Dr. Habershon's care, June, 1855. He was a man of steady, industrious habits. His health was good till an attack of rheumatic fever, two years before; and at Christmas last, six months before admission, had a very severe fall while at work; he fell upon his head, and it was believed that the skull was fractured. He remained for some time in the hospital, under the care of Mr. Birkett. His present illness commenced three weeks before admision, when, in the middle of the night, he awoke with great difficulty of breathing, respiration being accompanied with considerable distress and pain. These symptoms increased much in severity, and presented the signs of pleuro-pneumonia on the right side.

On admission he was exceedingly ill; his countenance pale, his eyes glistening, lips and nostrils contracted, the teeth covered with sordes, the tongue brown at the base and edges, the skin hot and clammy. In the chest, there was found to be increased roundness of the right side at the base, imperfect mobility, increased dulness on percussion, loss of tactile vibration, and in front, below the nipple, was a pleuritic rub. On the left side, the respiration was puerile, and, at the apices, the expiratory murmur was prolonged and coarse. The position of the heart was normal; its sounds healthy, but the precordial dulness was somewhat increased; the respiration was 26 per minute; the pulse 95, feeble and compressible; the urine was high-coloured, acid, sp. gr. 1025. His position, on lying in bed, was midway between the right side and the back, with knees drawn up, and the head thrown forward.

The prostration and typhoid state increased till June 14th, when deep-seated fluctuation below the ribs on the right side could be detected, beneath the lumber fascia about the quadratus lumborum muscle. An exploring needle was passed, and afterwards a director, and the wound enlarged: about a pint of pus, having a strong fæcal odour, was discharged, the abscess continuing to discharge freely. After the opening of the abscess, the respiration became more free, and he coughed up a considerable quantity of frothy mucus, having the same odour as the pus. His strength was sustained by

nourishing food and stimulants—by quinine and opium; diarrhœa was occasionally troublesome, and the offensive expectoration exceedingly distressing.

On July 3d he had so much improved as to be able to be carried out into the open air for half an hour. The offensive character of the breath and respiration gradually subsided; healthy respiration became audible nearly to the base of the lung, and he continued to gain flesh.

In October he returned to his work, and now appears a stout, hale man; but a fistulous opening remains up to the present time, which occasionally discharges freely. In this case deep-seated suppuration took place near the quadratus lumborum muscle, acute pleuro-pneumonia on the right side, and the most severe constitutional symptoms followed. The pus which was evacuated, and the mucus expectorated, were of a most offensive and feculent odour; but microscopical examination of the pus could not detect decided fæcal elements. Diarrhœa came on; the feculent character of the discharges slowly subsided; but the expectorated matters tried the patient much. Several facts render it probable, that the abscess was in close contact with the ascending colon; mere contact with the intestine would probably be sufficient to explain the fæcal odour; and it may be, that the contents of the abscess were partially discharged into the colon.

In the investigation of the case several modes of explanation were suggested—1. An abscess, the result of the blow. 2. Caries of the vertebra or its processes. 3. Abscess of the liver. 4. Empyema. 5. Suppuration external to the kidney, from disease of that organ.

Although there was evidence of acute disease of the chest, the abscess was evidently below the diaphragm, and probably in contact with it; there was no evidence that the kidney was affected. The character of the pus, and the absence of the elements of bile, indicate freedom from hepatic disease. It is probable that disease of the vertebra or its process had been set up by the blow.

The principal interest arises from the difficulty in forming a correct diagnosis, especially at the earlier stages of this deeply seated inflammatory disease.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 56.—*The influence of Atmospheric Conditions upon the Urine.* By Dr. THOMAS MOFFATT, of Hawarden.

(*Assoc. Med. Journ.*, Aug. 30, 1856.)

From meteorogical observations taken at Hawarden during five years, in connection with the phenomena of disease, it would appear that the maximum of diseases takes place with decreasing readings of the barometer and thermometer, and with directions of the wind from points between S.E. and N.W. by way of south; that the maximum of deaths occurs with similar readings of the barometer, but with directions of the wind from points between N.W. and S.E. by way of north; and that the maximum of ozone corresponds with the atmospheric conditions which give the maximum of diseases, and the minimum with those which give the maximum of deaths.

Seeing these results, it was thought highly important, both in a scientific and practical sense, to ascertain whether any changes in the animal functions could be discovered during atmospheric variations; and, if so, to conduct a series of observations on such functional changes, in connection with meteorological phenomena. Believing that variations in the physical character of the urine are sure and certain indications of functional derangement in the animal economy, I commenced examinations of the density and quantity of that fluid daily, and continued them for a time. On applying these to my meteorological register, the results were so encouraging that I determined upon conducting a regular series of investigations. The observations from which the results are deduced extend over a period of eighteen months.

The person whose urine was examined is a healthy man, of bilious temperament. He was actively employed, both in body and mind, in and out of doors, during the whole of period of investigation. His time out of doors, freely exposed to the weather, was on an average six hours daily, namely, from 11 a.m. to 5 p.m.; and the quantity and character of his urine, for these hours, and for twenty-four hours, were daily ascertained. As the density of urine, like that of all other fluids, varies with its temperature, it was necessary to fix a standard temperature, and to apply a correction, plus or minus, as the case might be; and, as 62° Fahr. is the standard heat of water by which the specific gravity or liquids is compared, I took that number for the standard temperature of urine, and reduced all observations in this inquiry to that degree.

From frequent examinations of urine, while passing from higher to lower, and from lower to higher degrees of temperature, I found that the mean increase of density of the liquid, in passing from 95° to 65° Fahr., is 0·001 for every ten degrees; and that, in increasing the temperature from 40° to 60°, the decrease of density is about the same value; so, if the density of urine be increased 0·001 for every ten degrees of Fahrenheit above 62°, and reduced 0·001 for every ten degrees between 40° and 62°, it will be found that the correction is sufficiently accurate for all practical purposes.

In conducting examinations of the urine, it must be borne in mind, that the quantity of *liquid* evacuated is no measure of the quantity of urine secreted. The *solids* excreted are the "real urine;" and it is by ascertaining the amount of these, that the depurating power of the kidneys can be estimated.

In calculating the quantity of solids, I used the formulæ of Drs. Christison and Golding Bird.

The following table shows the per centage of diseases, with variations in the readings of the barometer and thermometer, with the quantity of ozone, and directions of the wind, for a period of four years; and it also gives the mean daily quantity of solids in the urine, with similar variations, for a period of eighteen months:

	Per centage of disease.		Mean daily quantity of solids in urine. grs.
Barometer :—Increasing readings.....	26·8	.....	1386
„ Decreasing readings.....	73·2	.....	1460
Thermometer :—Increasing readings	37·7	.....	1366
„ Decreasing readings	61·8	.....	1439
Ozone :—Absent.....	28·1	.....	1395
„ Present	71·1	.....	1450
Winds :—North points of compass ...	47·1	.....	1284
„ South points of compass ...	59·3	.....	1368
Calms	49·5	.....	
Calms and variable breezes		.....	1427

By this table it appears, then, that the maximum of solids in the urine corresponds with those atmospheric conditions which give the maximum of diseases. The quantity is greater in dry than in moist air; the numbers being, on days of decreasing degree of humidity, 1506 grains, while there are 1354 grains on days with increase of humidity.

Believing that the animal economy adapts itself to existing atmospheric conditions, and that it is owing to frequent changes of the weather that functional derangement and diseased action are produced, I ascertained the quantity of solid urinary products on all the days on which periods of increasing readings of the barometer commenced, and on those on which periods of decreasing readings began. The following are the mean quantities for these two sets of days:

	grs.
Mean at commencement of increasing periods	1413·5
Mean at commencement of decreasing periods	1547·7

giving a mean daily quantity of 134·7 grains greater on days at the commencement of periods of decreasing readings, than on days on which periods of increasing readings commence.

Taking the mean quantity of solids on days on which diseases occur, and on days of no disease; and on days on which deaths take place, and on days on which there are no deaths; we find that the mean quantity is 29 grs. greater on days of disease than on days of no disease; and 74 grs. less on days of deaths than on days of no deaths. Thus we find that the maximum of solids in the urine corresponds with the atmospheric conditions which give the maximum of ozone and disease; and the minimum with those which afford the minimum of ozone and the maximum of deaths. The quantity of solids is 69 grs. greater than the mean daily quantity on days on which attacks of rheumatism and gout take place.

The mean daily quantity of urine from which the above results are deduced is 72 oz., and a mean daily density 1·019; which, according to Golding Bird's formula, gives the mean daily quantity of solids 1418·4 grs.

The mean daily quantity of urine evacuated from 11 a.m. to

5 p.m. was 11 oz., the mean density of the same 1·020; which gives for six hours a mean quantity of solids 227 grs.

The mean quantity of liquid for one hour in twenty-four hours is 3 oz.; and the mean quantity of solids for one hour in the same period is 59·1 grs. The mean quantity of liquid for one hour from 11 a.m.* to 5 p.m. is 2 oz. (1·8): and the mean quantity of solids for the same period in six hours is 37·8 grs.; giving a mean of 21·3 grs. less per hour daily, while a person is exposed to the open air, than the mean per hour for twenty-four hours.

According to these results, a man evacuates by the action of his kidneys, in round numbers, three and a half ounces of solids daily; or seventy-three pounds avoirdupois annually. Assuming that these numbers represent the mean quantities evacuated by the inhabitants of these islands, and taking the adult population at twenty millions, we find that they excrete 660,165 tons of solids annually; and by referring to the figures in the table, we find that they evacuate during the year 35,714 tons more on days of decreasing readings of the barometer and thermometer, than on days of increasing readings; 7142 tons more when the humidity of the air is decreasing than when it is increasing; 26,785 tons more on days when there is ozone than on days of no ozone; 35,714 tons more with directions of the wind from south than from north points of the compass; and 276,785 tons more during calms and gentle variable breezes than when there is a moderate current of air.

Taking the adult population of London as two millions, and assuming that all the solids secreted by their kidneys are carried into the Thames, that river must hold in solution, or have suspended in its waters, a mean daily supply of 181 tons of solid urinary products. The quantity, however, varies with the weather; for, according to the above results, the Thames will contain ten tons more on days when the readings of the barometer and thermometer are decreasing than when they are increasing; a daily mean of three tons more when the humidity of the air is decreasing than when it is increasing; seven tons more on ozone days than when there is no ozone; about ten tons more with south than with north winds; and a daily mean of seventy-five tons more during calms and gentle breezes than when there is a current of air. Let agriculturalists bear in mind, that from the action of the kidneys alone of a London population, 66,016 tons of British guano are annually swept into the Thames.

The quantity of solids excreted in twenty-four hours ranges between 650 and 1381 grains, giving a range of 1181 grains. The greatest quantity of liquid evacuated in twenty-four hours was 115 ounces, and the smallest 20, giving a range of 95 ounces. On the day on which the greatest quantity of solids occurred, the reading of the barometer, which was decreasing, was 29·764 in. The wind was south-east; and ozone was perceived on the previous and following days. On the day on which the smallest quantity of solids was observed, the barometer reading (the commencement of a period of

* The urine examined between 11 h. and 5 h., was that of two meals, viz., breakfast and dinner.

increasing readings) was 30·040 in.; the wind veered from south-east to north-west. There was a trace of ozone, which had not been detected for two days, and it was not again perceived for a week. It then reappeared with the commencement of a period of decreasing readings of the barometer, and an increase of the quantity of solids in the urine from 650 to 1379 grains.

The mean quantity and density of the urine I have given is above that of Drs. Prout and Golding Bird, and M. Becquerel. By the former, from 30 to 40 ounces are given as the mean daily quantity of fluid, at a mean density of 1017; by the latter, the average quantity is stated at 45 ounces. I do not know from what number of observations these results were arrived at; but I do not hesitate to say that if they did not extend over a period of at least one year, very little dependence can be placed in them; *for the physical character of the urine is as variable as the wind.* To show how much the quantity of solid urinary products varies at different seasons, I may mention that the mean daily quantity for the three months, April, May, and June, 1855, was 1427 grains; while that for the three months ending September was 1192 grains, giving a difference of 235 grains. I may also state that the extreme quantities occurred once only in twelve months. To arrive at anything like accuracy, the urine of several persons should be examined daily for a period of two years at least.

The period over which this investigation extends is too short to allow of anything like reliable conclusions; but it may be stated that there is a greater quantity of solids excreted by the kidneys during decreasing readings of the barometer and thermometer than when the readings are increasing; that the quantity is greater during ozone than during no ozone periods, and with directions of the wind from south than from north points of the compass; and that it is greater during calms than when there are atmospheric currents.

It also appears that the quantity is greater with dry than with moist air, which may be owing to the cutaneous exosmosis being increased by the moisture in the atmosphere. We observe, then, that warmth and moisture of the air diminish the quantity of solids in the urine; and it is worthy of remark that Mr. Copland Hutchinson attributed the rarity of calculus among sailors to their sleeping in the lower decks, where the *temperature* and *moisture* of the air are increased to that degree, that the place becomes a vapour bath. The smaller quantity of liquids and solids in the period of the day between 11 a.m. and 5 p.m. may be attributed to the free action of the skin while the body was exposed to the open air.

It also appears that the quantity of solids is greater at the commencement of periods of decreasing readings than at the period of increasing readings; and it is with the former class of readings that the maximum of diseases takes place.

It also appears that while the urine of one person gives signs of functional derangement, without any apparent disease, under certain atmospheric changes, another person may be seriously ill under similar conditions of the air.

Art. 57.—*Peroxide of Iron in the treatment of Lithic Acid Deposits.* By M. Cantilena.

(*Giornali Veneto d. Sci. Med.*; and *Gaz. Méd. de Paris*, March 8, 1856.)

The case which is here related has a very important therapeutical significancy. It shows very clearly that the presence of these lithic acid deposits may depend upon deficient oxygenation, as well as upon a superabundance of proteine articles in the diet; and that in treating these deposits, it is not enough to restrict the proteine articles. It shows, indeed, that in some instances the real fault may be entirely and exclusively in the want of a proper degree of oxygenation in the system.

Case.—A lady, æt. 32, suffering under marked symptoms of chlorosis, had been troubled with lithic acid deposits in the urine for two or three years. A vegetable diet and alkaline medicines had been tried, and failed. Peroxide of iron was then tried in moderate doses, and this with a view to its direct oxygenating effects, as well as with a view to the multiplication of the natural oxygen-carriers—the blood corpuscles. Five days after this treatment was commenced, the quantity of lithic acid was sensibly diminished; twelve days later, scarcely a trace of this acid remained; a week later, and the last trace had disappeared. The treatment was then suspended, in order to see whether the acid would again make its appearance. In three days there were traces; in three or four days added to these, these traces were still more marked. Then the treatment was resumed, and the urine again became quickly normal. The treatment was persevered in for two months, and the last report is, that the patient got well, and had been well for seven months.

Art. 58.—*On the treatment of Diabetes.* By Joseph Bell, Physician to the Royal Infirmary at Glasgow.

(*Glasgow Med. Journal*, July, 1856.)

In some remarks on the treatment of the cases of diabetes admitted into the Glasgow Royal Infirmary, from November, 1854, to April, 1856, Dr. Bell concludes that—

"1. Opium has a most powerful effect in diminishing the quantity of urine, but does not cure the disease.

"2. Ammonia seems to possess, at least in some cases, the power of reducing the amount of urine, the specific gravity, and quantity of sugar.

"3. Opium and ammonia combined have a most beneficial effect.

"4. Cod-liver oil alone is beneficial,—it improves the general condition of the patient, reduces the quantity of urine, and lessens its specific gravity.

"5. Cod-liver oil, combined with opium, rapidly improves the strength of the patient, and reduces the urine.

"6. The combined use of cod-liver oil, opium, and ammonia, effects the most prompt and permanent benefit.

"7. Blisters to the hepatic region are useful.

"8. The restriction of diet is rather baneful than beneficial. A mixed generous diet is the best.

"9. In the present state of our knowledge, we can only expect to improve the general condition of the patient, restrain the waste of tissues, maintain the vigour, and reduce the amount of urine. In this way we can mitigate the disease, and protract the life of the patient. We are bound to confess that we have no cure for diabetes. It is not the only disease which defies the efforts of our art. In many other affections, we can only palliate suffering and prolong existence. These objects we can very satisfactorily accomplish in diabetes, by the judicious use of cod-liver oil, opium, and ammonia.

"But it may be asked, how are we to explain the instances of reported cures that from time to time are published, ever and anon exciting our hope that an agent has been placed in our power, by which we can secure an easy victory over the disease? My answer is twofold. 1st. That such cases may have been of a mere temporary nature; a character under which diabetes is sometimes presented. 2dly. That in many of the published cures, an erroneous diagnosis may have been made in consequence of the use of Moore's or Trommer's tests, both of which are deceptive, a brown precipitate being produced by the presence of other organic matters as well as by sugar. I would admit no case as genuine diabetes unless the yeast test had been employed. I do not speak from conjecture on this point; but from experience. Indeed, I fell into this very mistake some years ago, in consequence of this brown deposit. The fallacy was pointed out to me by the late Dr. M'Gregor. I have reason to suspect that many of the cases that have been published regarding the presence of sugar in the urine of old persons, especially when labouring under disease of the lungs, the deoxidation of the copper is effected by some other organic matter, and not by sugar. I have often, in such cases, been able to produce a brown sediment, but I have always failed to effect fermentation."

Art. 59.—*On Diabetes Mellitus.* By Dr. Gray.

(*Glasgow Med. Journal*, Oct., 1856.)

The following remarks upon the pathology and treatment of diabetes occur in a paper recently read before the Medical and Chirurgical Society of Glasgow. Dr. Gray is still confident as to the advantages of this treatment. "Experience" (an experience now extending to twenty-eight cases of decided diabetes), he says, "warrants me in pronouncing it superior to any yet adopted."

Dr. Gray proceeds:

"The rational basis on which I build my theory is that, if rennet out of the body converts a solution of sugar into lactic acid, it may possess a similar property within the body. Bearing in mind, too, that lactic acid is found in the juice of flesh, and, according to Liebig, is a supporter of the respiratory process, I conceived that if sugar formed in the body of a diabetic patient could be converted by the rennet into lactic acid, it would be burned in the lungs; and that, if a larger

quantity were formed than could be consumed in that way, it would be excreted by the kidneys. In this I was not mistaken, for lactic acid was more than once detected in the urine of my first two patients. To say that rennet is an infallible remedy in any or every case of diabetes, would be overrating its virtues. Where this complaint is complicated with organic disease in any organ, the organic disease must be removed before we can look for a cure. It will, at least, in such cases, ameliorate the symptoms, mitigate suffering, and tend to lengthen life—the greatest desiderata after an effectual cure. I have been led, from my own personal experience, to classify diabetes under three heads :

"1. Where the stomach is primarily affected, as has been shown by the experiments of M'Gregor (to whom I am indebted for my first clear views on this disease), and since by Bouchardat, who, as already stated, discovered a substance similar to diastose, and possessing the power of converting starch into sugar.

"2. Where the liver is primarily affected, as has been prominently brought out by the experiments of Bernard. He has shown that, besides its use in the economy as an eliminator of bile, the liver is a sugar-forming agent, and that this power rests with the tissue of the organ, which seems to act the part of a ferment on the nitrogenous fluid circulating in the body, and from which sugar is eliminated; thus one equivalent of protein, fifty-two of oxygen, and four of water, may be represented by two equivalents of grape sugar, three of urea, and eighteen of carbonic acid.

"In support of such a doctrine, I may state that I have kept patients for weeks on a strictly animal diet, where not a single atom of starch or sugar was taken, and where not a particle of sugar could be detected in the fæces, and yet sugar was excreted with the urine in large quantities.

"3. Where both stomach and liver are simultaneously affected.

"I am inclined to term the first diabetes gastricus, the second diabetes hepaticus, and the third diabetes gastro-hepaticus; and have adopted such a division the more, that it does not locate the disease in one special organ, believing, as I do, that something of truth may be found on either side.

"In diabetes gastricus, where the hydro-carbons come into play, and where uncomplicated, I believe the rennet treatment will be found eminently successful. The mode I adopt and recommend of preparing the rennet is the following: the stomach of a calf (and the younger it is the better) is gently washed with water, taking care not to injure the mucous membrane; it is then well salted, tied up, and allowed to dry. After this, it is cut up into small pieces, macerated in a pint and a half or two pints of water, according to the size of the stomach, for four days, or longer in the winter, shaking it at intervals; the fluid is then poured off and bottled; and to test its power, a spoonful may be added to a pint of warm milk, which if it curdles, it is now fit for use. Some stomachs are better than others, in which case the preparation is much stronger and more efficacious. This depends materially upon the honesty of the party from whom the bag may be procured; for I have been told by a respectable butcher, that the parties who are in

the habit of selling bags for this purpose, not unfrequently take a dozen or so of stomachs, macerate them with salt and water, pour off the fluid, and dispose of it to farmers for dairy purposes; the stomachs are then tied up, and passed off as genuine first-hand articles. I may also call attention to a fact, well known to dairymaids, that after a thunderstorm rennet is useless to curdle milk—thus showing that a certain electric condition of the atmosphere exerts an influence upon the fluid. A little spirits, or decoction of sparrowgrass, may be added to make it keep. The dose of rennet thus prepared is a table-spoonful, three, four, or six times in a day, usually about half an hour after each meal, and during the process of digestion—followed shortly after by an alkali, to neutralise the lactic acid formed. That which I recommend is the alkaline tribasic phosphate of soda; but the carbonate of potash will answer very well, either alone, or combined with the tincture of nux vomica, in five or ten drop doses. The nervous system in these cases seems at fault, and the nux vomica here serves as a stimulant and valuable tonic. In many of the cases treated, I have further recommended the inhalation of chlorine, from the power it possesses of destroying putrefaction, and arresting the fermenting process. In all, I have now treated twenty-eight cases of diabetes by rennet, of which nineteen were males and nine females. Of the males were five gentlemen following no profession, two youths, one chandler, one labourer, one engineer, one wright, one ploughman, one policeman, and six farmers; females—one mill-girl, three maid servants, and five domestic married females. Of these, seventeen were, more or less, connected with agricultural pursuits. The ages varied from 11 to 65 years; with three exceptions all were in comfortable circumstances; eleven were in the habit of smoking, or using tobacco in the form of snuff; and although a few occasionally indulged to excess in alcoholic liquors, this was not by any means a general feature.

"The complications of most frequent occurrence I found to be phthisis; next, dysentery; and, lastly, anasarca, depending upon remote disease of the kidneys. The diet which I advise at first is strictly animal; and where the poverty of the patient does not permit of the free and generous use of the better quality of butcher's meat or eggs, I recommend the heart, lung, liver, and kidneys to be substituted, as many good and savoury dishes can be made from these organs; a soup made from the liver answers admirably in the troublesome constipation which accompanies this disease. Bread free from starch may be made as follows, according to the recommendation of Prout and Christison: six eggs beat up, to which are added four ounces of butter; make into cakes with finely ground bran. An excellent pudding is also made with curds, well washed, dried, and powdered—butter and eggs—which is salted and spiced to taste. Salted fish makes a good change, and does not increase the thirst so much as might be supposed. A variety of vegetables may be also given, as greens, kidney and French beans, and nettles even make an excellent dish, lettuce, artichokes, &c. As it is impossible to keep a patient for any length of time on a strictly animal diet without doing injury, I therefore add, after a little while, bran bread as found in the baker's,

which I think quite equal to the gluten bread as it is made in this city, and much less expensive.

"If we consider the slow and insidious approach of diabetes, and that it generally has a firm footing before the patient is alarmed into taking advice upon his increasing symptoms, and that for weeks or months the true nature of his complaint may remain undetected even by the physician, we will not be surprised that it should take a considerable time to be entirely removed. The shortest period in which I have found sugar to disappear has been two weeks, the average from that to nine months. The importance of air and exercise cannot be overestimated, as they are indispensably necessary to improve the general health. Hence, I do not consider an infirmary a proper place for treating a diabetic patient. Attention to the functions of the skin is no less requisite, for which purpose the tepid bath, followed by friction, should be used, as also anointing the body with oil. The patient being usually melancholy, and a prey to gloomy apprehensions, it is of paramount importance to gain his confidence, and if possible infuse hope into his desponding heart. This the physician should know how and when to do in each respective case. In a word, nothing should be left untried which might tend either to improve or invigorate the body, or restore serenity and hope to the mind.

"Where diabetes is complicated with phthisis, I prescribe cod oil and morphine, and although I have never known such a case to recover, I have found such much benefited. I have also seen this disease follow as well as precede consumption. The preparation I have used with most success in such cases was a solution of phosphorus in chloroform, with the tincture of benzoin. Of the twenty-eight persons treated, seven have recovered; that is to say, they have regained the weight lost, their urine was diminished in quantity to about the usual standard, and contained no sugar, and they expressed themselves as being 'fit for their work, and in as good health as they ever were.' Three died; two from disease of the chest, and the other from dysentery, complicated with effusion of pus in the left pleura, and seven still remain under treatment. Of the remaining eleven, while I have lost sight of several from the fact that they were at considerable distance from town, I hold letters from others, expressing their thanks for benefit derived from the treatment. In thirteen of those cases, organic disease, and chiefly of the lungs, could be detected. I may finally remark, that only a few of those cases had not been previously under the treatment of other medical men, so that there could be no mistake in the diagnosis."

Art. 60.—*On the action of Digitalis in affections of the Genital Organs.* By M. Brughmans.

(*Journ. des Conn. Méd.-Chir.*; and *Révue Med.-Chir. de Paris*, Dec., 1855.)

The action of digitalis upon the generative organs is very little known; but, according to M. Brughmans, it is very marked and powerful. In order to be convinced of this, it is only necessary to take thirty-five or forty-five centigrammes of the powdered leaves

daily, for five or six days, when complete flaccidity and loss of all virile desires will be the result. Indeed, so marked is this action said to be, that the person experimented upon will almost disbelieve in the existence of his genital organs.

Acting in this manner, M. Brughmans conjectured that digitalis would be of great use in all inflammatory affections of the genital organs; and experience, he tells us, fully verified his conjectures. Heat, congestion, erythism, irritation, inflammation even, are all obliged to succumb to the influence of this drug. Six cases are given in corroboration.

Case 1.—A countryman suffering from epididymitis and blenorrhœa. The scrotum was enormously distended. Low diet, rest, and digitalis were prescribed, 40 centigrammes on the first day, 35 on the second day, 30 on the third day. On the third day the swelling had almost entirely disappeared. A smaller dose of digitalis was then given. Two days later every trace of the epididymitis had disappeared, and the discharge was greatly diminished in quantity. On the fifteenth day from the commencement of the treatment the discharge had ceased.

Case 2.—A patient suffering from chronic articular rheumatism. Digitalis in small doses was prescribed. When the patient was nearly well of the rheumatism, he mentioned a gonorrhœa from which he had suffered for a long time, and for which he had tried many remedies in vain. He was ordered to continue the digitalis, and in four days this discharge ceased.

Case 3.—A patient suffering from engorgement of the epididymis of six years' duration. This engorgement had resisted the influence of both mercury and iodine; but it yielded to low diet and rest, and digitalis, in about fifteen days.

Case 4.—A patient suffering from a thick and abundant urethral discharge, with inflammatory stricture, for six months, became cured, both of the discharge and stricture, in sixteen days, under the influence of the digitalis.

Case 5.—A patient suffering from symptoms somewhat similar to the last, became cured in four weeks under the same treatment.

Case 6.—A young man subject to nightly pertes séminales, who had tried many modes of treatment without relief, had digitalis given him in doses of 35 centigrammes. The next night passed without a perte. The dose was diminished by 5 centigrammes. The night following there was no perte. The same treatment was continued for fifteen days, and during the whole of this time there was no perte. Then the treatment was discontinued. A week later there was a perte. After this the digitalis was continued for a time in diminished doses for two months, and at the end of this time the patient was entirely well.

It is not easy to know what to say about these cases. We should be glad to think that the digitalis was half as efficacious in such cases as M. Brughmans supposes. At any rate, the question is worthy of consideration.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 61.—*On the Classification of Skin Diseases.* By Dr. GULL, Assistant-Physician to Guy's Hospital.

(*Assoc. Med. Journ.*, May 31, 1856.)

"A classification I would be inclined to adopt myself," says Dr. Gull in a clinical lecture, "is founded on the pathological facts of *common* inflammations of the skin, and *specific* inflammations, in the first place. Next, hyperæmia of the skin, as roseola or rubeola, pure congestion, but no inflammation; and hyperæmia passing into hemorrhage, as the familiar disease purpura; and lastly, *epiphytes* and *ectozoa*, one well demonstrated in porrigo lupinosa and porrigo scutalata—ectozoa by the insect in scabies. It is the common inflammations of the skin that puzzle the student, not the ectozoa with the long names, such as *microsporon furfur*, the new name for the sporules of dandriff, *trichophyton tonsurans*, the sporules of porrigo, or another, *microsporon* in the bulb of the hair in porrigo decalvans. Common inflammations puzzle the student, because in such a puzzling variety of constitutions met with; such a variety of applications, also, are used by patients themselves, that the appearances of the disease are changed. The student is seldom at a loss to recognise at once syphilitic lepra, small-pox, purpura, or porrigo; but in common inflammations (and these are the varieties of skin diseases to which I would more particularly direct your attention), he will be constantly at sea.

"Now, in conclusion, there are some diseases apparently of the skin, but not skin diseases at all, such as erythema leve, so common in young women, or the skin disease apparently of varicose veins in older people; or take *lichen circumscriptus*, where you have itching and papules. A young woman, perhaps, sitting up at night with a sick friend, watching, bowels neglected, &c., gets covered with lichen, but the disease is in the general system; let her rest forty-eight hours, and have a little opening or other medicine, and it disappears. I was consulted the other day in such a case; another practitioner sent her away, and said he did not pretend to understand skin diseases; but it was neither a skin disease nor one difficult to cure. Then there is the 'Barbadoes leg,' thought to be a skin disease, but it is a disease of the areolar tissue, with permanent deposit under the skin. Prurigo pudendi, again, arises from a varicose condition of the veins of the vagina; but, though classified as such, is not a skin disease, and so of a few others, as ephelis, the scorched leg of people who sit much at the fire, freckles, spots of epidermis not bleached, &c. I think the greatest improvements of late years are those few new facts of a microscopic character added to Bateman and Willan, and the fact of recognising the causes of some disease as *non-inflammatory*. No doubt this is the direction in which further improvement lies: for, as Bacon well says, —*Per causas scire, vere scire.*"

Art. 62.—*On Purpura.* By Mr. Hunt.

(*Medical Times and Gazette*, May 3, 1856.)

In this paper (which was read before the Medical Society of London, April 19th, 1856), Mr. Hunt considers purpura as having no better claim to be considered as a cutaneous disease than jaundice or cholera. He objects to regard it as necessarily a disease of debility, though so described by Willan and others, and he views it as simply a tendency to extravasation of blood, either beneath the epidermis, or in other parts of the body, producing hemorrhage, and as existing in two forms, the congenital and the acquired. For the former, he suggests no remedy. The treatment of the latter should depend upon its cause and the circumstance attending its development. Mr. Hunt cannot agree with Dr. Salter and others, that the existence of purpura necessarily demonstrated any special and necessary pathological condition of the capillaries; but he maintains, that in all cases there must be a disproportion between the momentum of the circulation and the resisting power of the capillaries; and whether the one or the other was in fault, or most in fault, was the question to be inquired into in every case. He has seen the disease arising from debility, and from insufficient nourishment, just as its analogue, sea scurvy, arises from improper food. In these cases, the indications were nourishing food, astringents, and tonics. But it frequently occurs under widely different circumstances. One prominent form of the hemorrhagic diathesis he has frequently seen connected with hepatic congestion and obstruction of the vena porta system, with well-marked symptoms, and occasionally complicated with jaundice. In these cases, if the patient were treated with astringents, tonics, and a nourishing diet, he would certainly die; the only available treatment being active purgation, with repeated doses of calomel and jalap, with a view to unload the intestines of the black, tenacious, pitch-like fæcal matter with which they are always loaded. The author also describes another form, in which, without any apparent cause, in robust and healthy subjects, purple spots, ecchymosis, and vibices appeared, together with hemorrhage from the mouth, nose, eyes, or ears, and from the internal organs likewise, from which the patient often sank. The remedy, and the only remedy, in these cases, is frequent vomiting, artificially induced. The petechiæ which appeared in severe cases of typhus and the eruptive fevers, presented again another form of purpura, which required the mineral acids, quinine, and nourishment. The author concludes by expressing his conviction that purpura, or the hemorrhagic diathesis, presents, *per se*, no proof of the existence of any particular or invariable lesion; that it does not necessarily indicate debility, nor a friability of cell-wall, nor a diseased condition of the blood, nor a gorged liver, nor the approach of collapse in fever, nor an increased momentum of blood in a robust or healthy subject; but that yet it may occur as a result of any one of these conditions, and perhaps many more; in short, that it was in fact no disease at all, nor even a symptom necessarily of any one diseased condition, but

that it was simply an accidental complication, and that the thing to be avoided in its treatment was the error of assigning to it a pathological character, and thus treating it as itself the disease instead of inquiring most carefully into the circumstances of the individual case, and thus ascertaining correctly what is the thing signified by this most alarming, yet most equivocal sign.

Art. 63.—*Rapid cure of Itch.* By Dr. E. Smith.

(*Assoc. Med. Journal*, March 15, 1856.)

At a meeting of the Medical Society of London, Dr. E. Smith called attention to an article in the 'Gazette Hebdomadaire,' by Dr. Bourguignon, in which is a confirmation of the value of the treatment of itch, in Belgium, by sulphur, combined with lime, in a liquid form. The remedy is prepared by boiling one part of quick lime with two parts of sublimed sulphur, in ten parts of water, until the two parts are perfectly united. During the boiling it must be constantly stirred with a piece of wood, and, when the sulphur and lime have combined, the fluid is to be decanted and kept in a well-stopped bottle. A pint of the liquid is sufficient for the cure of several cases. It is sufficient to wash the body well with warm water, and then to rub the liquid into the skin for half an hour. As the fluid evaporates, a layer of sulphur is left upon the skin. During the half hour the acarus is killed, and the patient is cured. It is only needful then to wash the body well, and to use clean clothes. In Belgium the treatment is introduced by first rubbing the body for half an hour with black soap; but this does not appear to be necessary. The only essential act is that of the careful application of the fluid sulphur. The lime is of no importance in the treatment, except to render the sulphur soluble, and such would probably be the case if potass or soda were employed. The chief point in the plan thus employed, which is an improvement upon the mode of application of sulphur in substance with lard, is the more ready absorption of the remedy, and consequently the more certain and quick destruction of the insect, by using sulphur in a fluid form. In so disgusting a disease, it must be of great moment to be able to cure it in half an hour.

Art. 64.—*On the Keloid of Alibert.* By Dr. Ludwig Benjamin.

(*Virchow's Archiv*, Bd. viii, Ht. 4, 1855; and *Dublin Quart. Journ. of Med.*, May, 1856.)

As, among the few descriptions which exist of Alibert's keloid, not one, so far as I am aware, enters upon its microscopic characters,—probably because its comparatively rare occurrence affords but little opportunity for investigation,—it has occurred to me that the following report might prove interesting:

A practitioner in this city attempted, by means of the application of caustic, to remove a small congenital mark situated on the buttock of a girl; but as during six weeks' treatment the affection appeared

rather to increase in circumference, the parents lost confidence in the very painful remedy, and gave it up.

At the age of two years they brought the child, who was then very strong, to me, their apprehensions being excited by a tumour which had arisen out of the spot, and was steadily increasing and extremely itchy. On examination, I found in the situation indicated a keloid, almost as large as the palm of the hand, projecting three or four millimetres (·11811 or ·15748 inch) above the cuticle, with a very irregular border, and numerous processes of various lengths and forms, which extended, some triangularly pointed, for two or three centimetres (·7874 or 1·1811 inch), others rounded at the end, for one and a half or two centimetres into the surrounding healthy cutis. Clearly defined from these by its elevation, the tumour was also distinguished by a pale red coloration and some deep furrows, while the fine depressions and hairs of the healthy skin were absent; it resembled a very prominent cicatrix, but in hardness considerably exceeded the latter. Little hemorrhage attended the extirpation, which was effected in the healthy skin.

The tumour, examined while fresh, was found to be everywhere as distinct from the surrounding healthy adipose mass as it was inseparably connected with the cutis. In two opposite places near the edge, a number of small vessels, not extending far, penetrated a capsule, which adhered to the tumour with tolerable firmness, and was thick and hard, consisting of areolar tissue, with scarcely any admixture of elastic fibres. The tumour contained no other vessels. On the surface of section it was of a silvery white appearance, and of cartilaginous hardness, and consisted of areolar tissue and corpuscles of the same; the former does not constitute curly bundles, but thick trunks, the firmly compressed fibres of which run at first in an almost straight direction, gradually separate from one another, and finally fall into several distinct bundles, which, vibrating in curls after repeated subdivision, are at last in nothing distinguishable from normal areolar tissue. The trunks of areolar tissue (*sit venia verbo*) are so closely compressed that no free space is left between them, whence the great hardness of the tumour; they do not run a parallel, course, but interlace in various directions, giving the field of vision the aspect of containing a number of trees jumbled together. The meshes which are formed by the bundles separating and leaving little chasms between the fibres are almost completely filled with numerous corpuscles of areolar tissue; this part of the tumour forms, nevertheless, a firm tissue, which is, however, of much looser texture than the basis is, and replaces the normal cutis otherwise occupying its place.

The structure and development of the tumour thus appear to be very simple: a few vessels passing at the basis through a capsule of areolar tissue supply the plasma, from which a fibrous layer, little differing in structure from normal areolar tissue, is formed; between the fibres lie corpuscles of areolar tissue, as they are found in almost all tumours consisting of this tissue which are still in process of growth. The keloid is, consequently, only a modification of the subcutaneous areolar tissue, and is to be classed with warts, condy-

lomata, &c.; it is probably more frequently connected with varices; as in this case in two places it proceeds from the cutis, or draws the latter into its circle of formation; is free from pain, but excites violent itching; does not always grow so quickly as in the present instance, in which within two years it attained so considerable an extent as to occupy a space equal to that of the palm of the hand, and has probably no defined limit to its extension, unless this be artificially effected. The general health does not suffer by it, at least it did not in my case; the wound, too, healed without any interruption, so that the theory that keloid is a product of a dyscrasia certainly does not hold good in every instance.

Finally, I may mention, that the tumour, in its interior, in one place contained striated muscular bundles, precisely as earlier observers (Rokitansky, Virchow, Weber, and Billroth) have seen. I suspect that these occur much more frequently in tumours than has hitherto been found to be the case, and that they shall be discovered more commonly in proportion as the use of the microscope gains ground among surgeons, and as the number of more minute investigations shall consequently increase.

Art. 65.—*On a vesicular disease contracted from Sheep.* By Dr. Burrows, Physician to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, June 14, 1856.)

In its general characters this disease is very similar to acute pemphigus, but it differs apparently in the circumstance that we have vesicles mixed with bullæ. It further seems to differ from pemphigus in the fact that the mucous membrane of the eye, the nostrils, the mouth, the tongue, and the pharynx, are all implicated at the same time.

Dr. Burrows' remarks occur in a clinical lecture:

"I am about to describe a peculiar disease, which I believe to be derived from the sheep,—a disease, as far as I know, not hitherto described or adverted to by systematic writers. I have myself only seen two examples of this disease; they both occurred in young butchers, who had wounded themselves while cutting up sheep's heads, or dressing them for sale. The disease consists essentially of an abundant eruption of successive crops of vesicles and bullæ, of various sizes. These vesicles and bullæ are in some parts isolated from each other, and in other parts more numerous, and congregated together,—what we call confluent. These vesicles and bullæ appear principally upon the finer and more delicate portions of the skin and body, about the cheeks, the lips, beneath the chin, on the throat, the breast, upon the upper and lower extremities. These vesicles, or bullæ, however, are not confined simply to the cutaneous surface; they are found also upon the conjunctiva, upon the mucous membrane covering the tongue, the membrane lining the lips, upon the soft palate, and perhaps, also, similar vesicles might be found on the lining membrane of the nostrils and of the pharynx. During the continuance of the disease, a discharge of mucus exudes from these parts, the nostrils

and pharynx. The external appearance of this eruption generally resembles that of acute pemphigus, but not altogether; for we observe, that in some parts this vesicular eruption resembles the aggravated form of herpes, the vesicles being small and congregated together, with inflamed margins. In other parts the vesicles are larger, and isolated, the eruption more closely resembling pemphigus; in other parts the surface appears blistered, as by the action of boiling water. The whole of the cuticle of a certain portion, one of the extremities (for example), is raised in continuous blisters, running into one another, as if the surface had been irritated by the action of boiling water.

"This is the general character of the eruption of the peculiar disease in question. Now, I will proceed to detail the symptoms of the particular case to which I have adverted.

"On the 8th of April there was admitted into Matthew Ward a young man, named Charles Handsdale. The following is the account which he gave of himself:

"He is a single man, in good circumstances, of healthy parents, living at Barnet. He states that five weeks ago, while cutting a fresh sheep's head, the knife slipped and cut his left thumb. He remembers the sheep's lung was full of 'white knobs;' but he remained perfectly well (with the exception of the thumb being incised, and subsequently discharging), till Saturday, April the 5th, without any symptoms of fever. He then noticed a spot upon his lip, which he states was like a scald; then a discharge from the eyes came on, but no headache and no shivering; and these spots gradually increased about his face and hands, till the disease had the appearance that it presented on admission. On April 8th, when admitted, his condition was as follows:

"On his face, more especially about the chin, was a crop of small bullæ, about the size of split peas. There were also similar spots on the mucous lining of the lip, as well as on the edge of the tongue, and on the soft palate and uvula. There was also a purulent discharge from the left eyelids. On the back of the hands there were some red elevated spots commencing to be papular. There were also about his abdomen and back and the upper part of his thighs, many red elevated spots.

"When I saw him on the following morning, his expression was anxious; face flushed; eyes suffused; accompanied with a purulent discharge from the inner canthus of the left eye and the outer canthus of the right. There was also a purulent discharge from the right nostril. Lips dry. About his face, below the chin, there was an abundant crop of bullæ, which to-day seem to be of a more pustular character. They are also increased in size, some being larger than a fourpenny-piece. Around each of the bullæ the cutis seemed inflamed. A few were now observed on the hairy scalp. The eruption was seen about the hands, around the wrists, extending up the inner aspect of the forearms. A similar eruption was also detected in each iliac region, the inner aspect of the thighs, upon the scrotum, upon the penis, and upon the back of the trunk; also upon each foot, about the ankle, and along the tarsus. Some of these bullæ were very minute, and others larger, about the size of split peas. As I have already said, the eruption was confined to the finer parts of the skin; in those parts where

the cuticle was thickened,—on the outer aspect of the arm and thigh, the palms of the hands and soles of the feet,—this vesicular eruption was absent. The wound in the thumb was open, and discharging. The constitutional disturbance was much less than might have been expected to accompany such an extensive eruption. He was evidently a youth of great courage, and made light of his pains. His breathing was easy. There was slight cough, and sore throat. Skin hot and dry. Tongue coated on the dorsum with a thickish white fur, the edges presenting an appearance of having small pimples upon them. Has a tolerable appetite; is not sick; no headache, and no thirst; bowels not open; urine free.

"Now, I shall not pursue this case day by day, through its progress, but I will read you the note of the day after his admission, and then I will tell you generally the progress of the case for the ensuing fortnight. We found, on the following morning, that he had slept but little, in consequence of the discharge from his eyes, which had been constant all night. His expression was anxious. He was lying on his back, with his mouth open. Lips and teeth dry. On the internal lining of the lower lip we observed a number of these minute vesicles, and some were to be seen on the soft palate, which had the appearance of being covered with patches of slough. About his face there were numerous bullæ, especially below the chin, and these had now begun to desiccate. About the upper extremities—on the inner aspect where the skin was soft—there was an appearance of these bullæ and vesicles; they were so numerous, and congregated so closely together, as to have become completely confluent. You could have fancied that the skin had been scalded with boiling water. About the thorax, also, the spots were more numerous, some of them containing fluid, which on the previous day they did not contain. They were more numerous about the trunk, about the axillæ and back, and in the iliac regions, the groins, the inner aspect of the thigh, and over the scrotum. Some of them were ruptured, and a copious discharge was taking place from the surfaces. The eruption was more abundant, also, over the lower extremities, ankle-joints, and over the footsteps. The constitutional disturbance was greater than on the previous day. He had a very restless night, having been kept awake by the discharge from the eyes, and a soreness over the surface of the body. The pulse was accelerated—108—small and sharp, but compressible. The dorsum of the tongue was still covered with fur. His appetite began to fail. He stated that he was very thirsty, but had no headache. The bowels were opened once in the morning, the motion being confined. Urine free. He complained of some sore throat. There was slight cough, and scanty mucous expectoration.

"Such was the condition on the second day. The disease was obviously a very peculiar one, such as is not usually presented to our notice in this hospital, or, I believe, elsewhere. The moment I saw this young man, I recognised a disease which had been under my notice about two years ago. In the month of March, 1854, a young man, named George Richardson, about the same age as this patient, was admitted into John Ward, and he presented over the surface of his body an eruption of a precisely similar character to the one I have

just described. I learned, on inquiring into his history, that he was employed as a shopman at a butcher's, and had been engaged in skinning, cutting-up, and dressing sheep's heads for sale, and that he had wounded himself. An eruption succeeded, and he came into the hospital at a more advanced stage of the disease, remaining there about a fortnight. He gradually sank, and died, worn out by the continual irritation, and the copious discharge from the surface. The body was not examined. From the moment I saw the present case I recognised it as a fellow-case to that which fell under my observation two years ago."

Art. 66.—*A new solution of Iodine in Skin Diseases.* By Dr. Max Richter.

(*Wochenbl. der Zeitschr. der k. k. Gesellsch. der Aertze zu Wien*, No. 51, 1855; and *Medico-Chir. Review*, July, 1856.)

The solution is made thus: half an ounce of iodine is to be dissolved in an ounce of glycerine, and subsequently half an ounce of iodine is to be added, which completely dissolves in a few hours. In the experiments made with this solution, it was applied to the surface by means of a hair pencil; the part was then covered with gutta percha paper, fixed at the edges with strips of plaster, so as to prevent the volatilization of the iodine. This was removed after twenty-four hours; and for a similar time, cold pledgets were applied. Burning pain, more or less intense, but rarely of more than two hours' duration, was produced. The repetition of the painting depends on the appearance of the part and the amount of disease. The conclusions of the author are—1. That the iodine thus applied acts as a caustic. 2. That while it possesses considerable curative powers in respect of scrofulous and syphilitic affections, it is especially useful in lupus. 3. That the solution dissipates even deeply seated tubercles of lupus, and may be applied for this purpose to the most tender surface without fear of eroding it. 4. That when the solution was applied only to a part of a diseased surface, the remainder was, nevertheless, influenced. 5. That it is particularly serviceable to large and superficial sores. 6. That after a series of paintings, and when the sore was almost healed, the local pains greatly increased in intensity.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING TUMOURS.

ART. 67.—*On the spreading of Cancer-cells into the neighbourhood of the Tumour.* By M. SCHRŒDER VAN DER KOLK.

(*Archiv. Gén. de Méd.*, Jan., 1856.)

IT is not only in epithelial and scirrhous tumours that we find nucleoli, nuclei, and the characteristic cells of cancer; on the contrary, the neighbouring parts, although healthy in appearance, present manifest alterations under the microscope,—alterations consisting in small cells, nuclei, granular matter, and fatty molecules, and which are more abundant in the immediate neighbourhood of the tumour.

The cause of this contamination of the neighbouring parts is ascribed principally to the infiltration of the intercellular fluid of the heterologous mass.

In M. Schrœder van der Kolk's opinion, the pain of cancer is always due to the invasion of the surrounding nerves by the cancerous elements.

The practical consequence is that in extirpating a tumour of the character in question, it is necessary to carry the incision far beyond the extent of apparent mischief.

ART. 68.—*On M. Landolfi's method of treating Cancer.* By M. BROCA and others.

(*Gaz. Hebdom. de Méd. et Chir.*, May 9, 1856.)

The commission appointed by the Académie des Sciences, consisting of MM. Broca, Cazolis, Furnari, Manec, Mounier, and Moissenet, have just reported most unfavorably upon M. Landolfi's method of treating cancer (*vide* 'Abstract,' XXII, p.122). According to the report, there is nothing new in this method, and the caustic employed is only the caustic of M. Canquoin disguised by the addition of a colouring and strongly smelling substance, and rendered more unmanageable and less certain in its action by the addition. The report also condemns M. Landolfi's plan of attacking only small portions of the tumour at a time. Nor is there anything of a practical character to

recommend this plan,—for of 9 cases of cancer of the breast, and 3 cases of cancroid disease, which were treated by M. Landolfi at the Salpetrière, under the eyes of the commissioners, the results were as follows :—among the 9 cases of cancer of the breast, there were 2 deaths, 4 decided aggravations of the symptoms, and 3 cicatrizations with immediate *repullulation*, consequently no cure; and among the 3 cases of cancroid disease, there was 1 in which cicatrization was followed by immediate *repullulation*, 1 in which the symptoms were so aggravated as to require amputation of a limb, and only 1 cure. In a word, the report stigmatises the plan under consideration as more painful and more uncertain than other modes of cauterization.

Art. 69.—*An unusual and obstinate form of Swelling.* By Mr. J. L. Milton.

(*Medical Times and Gazette*, June 28, 1856.)

The author (who described his own case at the meeting of the Royal Medical and Chirurgical Society, held June 10th, 1856) had long suffered from eczema of the scalp, to which, in June, 1855, were added most severe colicky pains, and neuralgia of the face. For this complication of maladies, the inhalation of chloroform was frequently used, combined with quinine, steel, croton oil, and galbanum internally, and the application of counter-irritants, and a strong astringent lotion containing a large amount of hydrocyanic acid and zinc, externally. Under this treatment the neuralgia disappeared, while the eczema was slightly remedied. One morning in September, 1855, a large pyriform swelling, firm and painless, of the colour of the skin, was observed, extending from the inner to the outer side of the left thigh, just below Poupart's ligament. It had disappeared before night. On the following morning a swelling, five or six inches in length by two in breadth, of the same character in every respect, save that it was red, appeared just below the crest of the left ilium; this travelled slowly down the left side of the sacrum, and then across to the right side of the pelvis, where it gradually faded away in a few days; that portion of the tumour which had been first formed having, however, disappeared much earlier. For three weeks, similar tumours formed daily about the pelvis and thighs; sometimes two or three formed simultaneously; after that time they were scattered, and less frequent. About the end of October the face was first attacked; a hard swelling, which ran its course in about eight hours, passed slowly over both eyes, from right to left, completely excluding light while the attack was at its height. On the 11th of December a most severe attack occurred in the face, the mouth and parts about it being the first seat of the swelling. Three times the throat was affected, the swelling reaching its maximum in that situation in half an hour, and giving rise to great alarm from the interference with respiration. One or two appeared at different times on the legs and arms. The number and severity of the attacks steadily declined from the last-named date, and finally disappeared in the March following. The swellings were never painful, nor did they yield, though firmly pressed.

Stiffness and distension were the only sensations remarked in connection with them, the integument over them being generally raised half an inch, and unaltered in colour. No desquamation or itching followed their subsidence, nor did any constitutional disturbance accompany either their outbreak or decline; the eczematous eruption was neither aggravated nor improved by their appearance; they never formed in the afternoon or evening, all which were noticed having commenced between four and ten o'clock a.m.; and, with one exception, all reached their utmost height in four hours. Those on the face were generally a week in subsiding; the others disappeared almost as rapidly as they arose. Colchicum and bichloride of mercury appeared to hasten the disappearance of an affection, of which the author, after diligent search, could discover no previous description.

(B) CONCERNING WOUNDS AND ULCERS.

ART. 70.—*A new method of treating Phagedæna.* By Mr. COCK.

(*Medical Times and Gazette*, April 12, 1856.)

Mr. Cock has recently been trying, in Guy's Hospital, a plan of treating phagedænic ulcers by constant irrigation. The method is, to have the sore well exposed, and the affected limb placed on some waterproof material; a reservoir above the bed is then filled with lukewarm water, and, by means of an elastic tube, a stream is kept continually flowing over the surface of the sore. By this means all particles of discharge, &c., are washed away as soon as formed, and the ulcer assumes the clean, pale appearance of a piece of meat which has been long soaked. In all the cases in which it has been practicable to employ the irrigation efficiently, a speedy arrest of morbid action has been secured, and the number has included several in which the disease was extensive and severe. The theory of the treatment is, that phagedænic action is a process of local contagion, the *materies morbi* by which the ulcer spreads being its own pus. Admitting this supposition —which there is every reason for doing—to be true, the object to be kept in view in curative measures is either to decompose or to remove the local virus. This end is accomplished somewhat clumsily by such remedies as the nitric acid, which, unless so freely used as not only to char up all the fluid matters, but to destroy the whole surface of the ulcer to some depth, fails to prevent a recurrence. Mr. Cock's plan of subjecting the ulcer to a perpetual washing attempts the accomplishment of the same end by a more simple and direct method. It involves no pain to the patient, and does not destroy any healthy tissues. Its one disadvantage seems to be, that, excepting on the extremities, its use would be attended with some inconvenience, from the difficulty of preventing the water from running into the patient's bed. Should, however, further trials confirm the very favorable opinion which has been formed at Guy's as to its value, these difficulties might no doubt be surmounted by the contrivance of suitable

apparatus. The directions as to temperature of the water are that it should be as warm as comfortable to the feelings of the patient; and, as preventive of smell, Mr. Cock advises the addition of a small quantity of the chloride of lime or of soda.

Art. 71.—*On Hemorrhage following Gunshot Wounds.* By Dr. G. H. B. Macleod.

(*Edinburgh Medical Journal*, May, 1856.)

"Hemorrhage following gunshot wounds is not now so dreaded as it used to be, because it is known to be by no means so frequent in occurrence as it was formerly believed to be. I have heard surgeons declare that tourniquets might have been left at home, so far as any use they were of at the battles of the Alma and Inkermann, but I suspect, though cases did not often require them when seen by the medical man, that hemorrhage is in reality the chief immediate cause of death in the case of the majority of men killed in the field. It would be a dangerous experiment to make, but withal a very interesting one, to go over a field of battle immediately after a fight, and record the apparent causes of death in each case.

"The returns fail to inform us of the numbers of cases in which secondary hemorrhage succeeded gunshot wounds in the course of this war, and though I have no figures to which I might refer in corroboration of the statement, I am inclined to think that the proportion is higher than that set down by Mr. Guthrie. The period of its occurrence has appeared to range, on an average, between the fifth and the twenty-fifth day, without drawing any minute distinction, as is done by Dr. John Thomson, between hemorrhage due to sloughing, ulceration, or simply excited arterial action at different stages of the process of cure. The fifteenth day has, curiously enough, been that on which it has taken place in the vast majority of the cases of which I have retained notes. One instance, the particulars of which I failed to learn, was said to have occurred as late as the seventh week, when the wound—a gunshot wound of the thigh—was nearly cicatrized. Hemorrhage occurring early has been almost universally treated on the principle laid down by Bell, and so well supported and elucidated by Guthrie, of tying both ends of the wounded vessel; but when the limb is much swollen, the parts infiltrated matted together and disorganized, it is all very well to say the same principles must be carried out notwithstanding the additional risk that the coats of the vessels may be diseased, but any one who has tried it a few times will know that to do so is no easy task. With a vessel like the posterior tibial, which has repeatedly bled and infiltrated the tissues of a large muscular calf, changing their appearance and matting them together, and with a large irregular wound, into which the blood from the vessel does not seem to be poured in a collected form, but to well out from a large sloughing surface, so as to afford no guide to its exact position, the undertaking is one of the most difficult that can be imagined. The rules and precepts laid down in books about passing probes from the surface towards the seat of the bleeding, the appearance assumed

by the vessel, and the dissecting-room directions to find it, are all utterly useless in actual practice; and the knowledge of them is often more a hinderance than an assistance. Watchful eyes and careful cutting are the only reliable guides.

"I believe that pressure so carefully applied over a long tract of the main vessel above, as will diminish, without arresting, the stream passing through it, will, in many cases, be sufficient to allow such coagulation to take place in the open mouths of the vessels as will prevent any future annoyance—that is always supposing a very large extent of an artery be not ripped open, as it were, and as I have seen it, by a rifle-ball. The French do not seemingly act so unreservedly on the principle of putting a ligature on both ends of a bleeding vessel as we do. They perform Anel's operation in not a few cases. The interesting and instructive nature of the following case is evident:—A Russian boy, wounded at Inkermann, was received into the French hospital at Pera. He had sustained a compound fracture of the leg from gunshot. On the fifteenth day after injury profuse hemorrhage took place from both openings. Pressure failed to arrest it. The popliteal was tied the same day according to the method of deligation recommended by M. Jobert, viz., on the inner side of the limb, between the vastus and hamstring muscles. The foot remained very cold for four days, and then violent reaction set in; and on the eighth day from the ligature of the main vessel hemorrhage recurred both from the original wound and the incision of ligature. Pressure was tried in vain. The superficial femoral was then ligatured on the tenth day from the deligation of the popliteal. Four days afterwards the bleeding returned from the wound, and pressure then seemed to check it. The ligature separated from the femoral on the twelfth day after its being tied, and the third day after, *i. e.*, the twenty-fifth day from the first occurrence of hemorrhage, bleeding again set in from the wound, the limb was amputated in the thigh, and the unfortunate patient ultimately recovered. Would Mr. Guthrie not have saved this man's limb, and the surgeons much trouble? It was a matter of common conversation in the hospitals at Constantinople, that when the weather was close and sultry, with little wind, there was certain to be a large number of cases of secondary hemorrhage.

"A soldier, resting his right hand on his musket, was struck by a ball on the web between the thumb and forefinger. The wound seemed trivial, but the whole hand swelled exceedingly. On the fourteenth day arterial hemorrhage occurred, and pressure was applied. The bleeding repeatedly recurred, and still pressure was persevered in. Finally the radial, and then the ulnar, was ligatured before the hemorrhage was commanded. An early search in the wound, and a thread applied to the orifices of the vessel, would have saved much annoyance and risk. The following occurred under my own notice:

"M'Garthland, a soldier of the 38th regiment, an unhealthy man, who still suffered from the effects of scurvy, which had been followed by fever, was shot through the left leg from behind, and externally forwards and inwards, on the 18th of June. The fibula was broken and the edge of the tibia was injured. He walked to the rear without

assistance. On admission the limb was greatly swollen. This swelling very much diminished in a few days. On the fifth day arterial bleeding, to a limited extent, took place from both openings. Recalling a case put on record by Mr. Butcher, of Dublin, the wound of the post-tibial, I determined on trying the effects of well-applied pressure along the course of the popliteal and in the wound, and employed cold, while the limb was raised and fixed on a splint. The object of the pressure on the main vessel was to diminish, not arrest, the flow of blood through it. On the eighth day there was again some oozing. Pus had accumulated among the muscles of the calf (one great objection to using pressure on the orifices of gunshot wounds), and required incision for its evacuation. On the ninth day a pulsating tumour was observed on the external aspect of the leg, and the next day the bleeding returned from both wounds.

"I wished then to cut down and tie the vessel in the wound, but a consultation decided on waiting a little longer, in the hope that the bleeding might not return. On the night of the eleventh day most profuse hemorrhage recurred. The attendant, though strictly enjoined, failed to tighten the tourniquet, but the necessary steps to arrest the bleeding were taken by the officer on duty. Next morning, when I first heard of the occurrence, I found the patient blanched, cold, and nearly pulseless. A consultation decided that the state of the parts made the securing of the vessel in the wound very problematical, and that as the limb would not recover if the main artery was taken up, amputation must be performed so soon as he had sufficiently rallied. When reaction had fairly taken place, I amputated the limb The removed parts were much engorged, sloughed, and disorganized. The anterior tibial was found to have been opened for about an inch shortly after its origin, and on it was formed the aneurism, which had a communication with both orifices of the wound. The artery should have been tied in the wound on the occurrence of the second bleeding. I say the second bleeding, as it very often happens that even when hemorrhage has taken place, to a considerable extent, and evidently from a vessel of large calibre, it never recurs. Many most striking instances of this have come under my notice. But though more than even this is true, and that frequently blood thrown out repeatedly is spontaneously arrested, still the great preponderance of cases in which it recurs in dangerous repetitions and quantities, as in the above instance, should cause us, I believe, to interfere on its second appearance, if it be in any quantity more particularly, and that we should not delay, so as to run the risk of such a return as will cause exhaustion. Not to interfere unless the vessel is bleeding, must not always be understood too literally, or we will often be prevented from performing a necessary operation till our patient is beyond our help. The hemorrhage recurs over and over again, and the surgeon, though as near as is practicable, arrives only in time to see the bed drenched, and the patient and attendant intensely alarmed. There is at the moment no bleeding, and he vainly hopes there will be no return; and so on goes the game between ebbing life and approaching death, the loss not great at each time, but mighty in its sum, till all assistance is useless.

"The use of acetate of lead, or gallic acid, though often trusted to in these hemorrhages, are surgical farces—mesmeric passes along the vessels would be of infinitely more service."

ART. 72.—*On the diagnosis of certain forms of infecting and non-infecting Syphilitic Sores.* By Mr. HENRY LEE, Surgeon to King's College Hospital.

(*Medical Times and Gazette*, June 7, 1856.)

In this paper (which was read before the Royal Medical and Chirurgical Society, May 13th, 1856), the author observes that Jenner regarded a peculiar kind of inflammation as essential to the production of the effects of the vaccine poison on the patient's constitution; and Willan made similar observations respecting the inoculation of the poison of smallpox. Unless the morbid process peculiar to each poison were gone through, although other constitutional effects might follow, yet that which constituted the peculiar action of the poison upon the patients would not. It was the same with respect to the syphilitic poison; the peculiar morbid process which indicated its introduction into the system was attended with inflammation of the adhesive character, as in the case of the cow-pox. The application of the syphilitic poison often gave rise to true suppuration in the inoculated part, but this was essentially a different morbid process to that by which the poison was introduced into the patient's system. Where a syphilitic sore at an early stage produced well-formed pus globules, that affection would not infect the patient's constitution; the virus from such a sore might be readily enough inoculated; much more certainly, indeed, than that from a genuine infecting sore. Inoculation, therefore, was no test of the necessity of treating a patient by mercury, since these suppurating sores, most readily inoculable, were not, if left to themselves, followed by secondary symptoms. Induration, the author regarded as affording no invariable evidence of the adhesive inflammation; for, in the first place, the product of the inflammatory action might be poured out upon the surface of the affected part, without infiltrating its tissue, which was as true of the adhesive as of the suppurative inflammation, and in neither case would there be any induration of the inflamed part; and, in the second, the presence of induration gave no invariable indication of the nature of the inflammation which produced it. The sense of touch alone would not invariably indicate whether the effused lymph would remain such until absorbed, or whether, in fact, the inflammation was of the adhesive or suppurative character. The information which the sense of touch failed to give, the examination of the secretion from the infected part would often supply. Examined under the microscope, fresh from the different sores, the globules in the discharges would often appear very similar; but if acetic acid were added before examination, a clear distinction might be drawn between those cases in which true pus globules were formed, and those in which they were not. When true pus globules were formed at an early period, and

were not produced by artificial irritation, the author maintained that no constitutional syphilitic disease would result. The various points mentioned in the paper were illustrated by cases.

(c) CONCERNING DISEASES OF BONES AND JOINTS.

ART. 73.—*On Incisions into Joints.* By Mr. GAY.

(*Lancet*, Oct. 25, 1856.)

Mr. Gay commences his paper (which was read before the Medical Society of London, 18th October, 1856) by observing that three years ago he had brought before the profession, through the same medium, a method of treating certain forms of articular disease by free incisions into the affected cavities; but that since that period his experience of this treatment had led him somewhat to modify his views, and had enabled him with more distinctness to define the particular forms and stages of disease for which it is more especially adapted. His object in making incisions was not merely to evacuate matter, as in the case of an ordinary abscess, and as this proceeding has been adopted and recommended by others, but as well, and even chiefly, for the purposes of allowing the more ready escape of cartilaginous or bony *débris*—often a cause of destructive irritation to a joint—and of setting up reparative action by making a closed or partially closed and diseased sac a part of a large and externally communicating wound. The results of his experience, as of that of many of his professional brethren who had adopted his views, had been still more to convince him that free incisions were of the greatest value in those forms of disease to which they were appropriate, inasmuch as they bring the diseased processes to an equally speedy termination as after resection of the joint, and have the greater merit of leaving the limb less mutilated, and the joint often almost as useful as before. Moreover, the incisions are comparatively harmless, and, in case of failure, do not lessen the chance of restoring the limb that resection, or other measures of a graver nature, might afterwards afford.

The first case, that of a lady aged 43, who had suffered for three years from all the symptoms of disease of the cartilage and bony structures of the knee-joint, and had come to town to have the limb amputated. On making an incision into the joint, over the seat of the principal pain, a small quantity of sero-purulent fluid trickled out with the blood. On examining the interior of the joint carefully, the cartilage was found to be entire, but slightly uneven, leading to the conclusion that the affection commenced in the synovial capsule, and had not seriously implicated other structures. The intense pain from which this lady suffered, especially at night, prior to the operation, was completely relieved by it; and, with the exception of a rigor on the day following, succeeded by slight fever, which soon yielded to treatment, not a bad symptom followed. The capsule soon healed, and in a month the patient began to walk about. She has since (three years having elapsed) enjoyed the perfect use of her limb.

The second was a case of hip-joint disease of three years' standing. A sinus, having two external openings, led into the joint. The limb was bent upon the trunk, and the joint still flexible, but with great pain. The discharge had almost ceased, and the diseased action appeared to be almost stationary, and had been so for several months. The joint was fairly opened by enlarging the sinus; the head of the bone had been partially removed, and was bare. The joint recovered completely after fourteen weeks, with considerable mobility, quite enough to make the limb useful.

The third case, of "strumous" disease of the articular cartilages of the knee-joint of long standing, in a boy 9 years old; the pain was severe, and the discharge profuse. The incision did not answer in this case, the disease making progress subsequently, as though pursuing its natural course, with the addition of a severe wound, which refused to heal.

The fourth case, of "strumous" disease of the knee-joint of three years' standing, in a girl 12 years of age. The joint was greatly distended, and had been so for more than six months. It was opened, a considerable quantity of sero-purulent fluid exuded, and, in defiance of every attempt to keep it open, the wound healed in three weeks, leaving the joint in the same condition as before. It was opened again after six weeks, and from this time the course of the disease was onwards; and removal of cartilages, caries of the ends of the bones, with profuse discharge, and failure of health and strength, followed. The treatment in this was of no avail; at last amputation of the limb was resorted to. The articular ends of both bones were carious, and the spongy texture of the bones intensely inflamed for some distance along their respective shafts. No traces of tubercle were found, but small deposits of pus in those parts of the bone where the inflammation was most severe.

The fifth case, a woman, aged 62, for disease of the joint belonging to the phalanx of the forefinger. It had existed six months, and remained stationary. The joint was quite loose, and grated when moved, also painful. A free incision on each side, and keeping the wounds plugged, led to speedy anchylosis.

The sixth and seventh cases were of hip-joint disease in children, of 7 and 8 years of age respectively. The disease in both cases was in its early stages, and in one only had a sinus been formed. The joints were opened freely, but with somewhat varied results. In both, fresh abscesses formed, and burst on the front of the thigh. In one, severe pain in the knee-joint followed, which could only be palliated by blisters, mustard poultices, and opium; in the other, symptoms of rapid pulmonary phthisis. These, however, subsequently yielded, and in both cases, after some weeks, the joint disease relaped into its ordinary forms, the discharge in each being profuse, and the health bad. The incisions in these cases were useless.

The last case was of a lad, aged 12, who had symptoms of subacute inflammation of the knee-joint. After three weeks of severe pain, a small opening was made into the joint, and some matter passed away. This did not give much relief. The wound ulcerated, and soon after an opening formed spontaneously, nearly two inches from the first,

which also led into the joint. Very little matter exuded, and the joint continued extremely painful. Some white (apparently) sloughy matter could be seen through these openings. Chloroform was given, and the joint laid open by an incision which passed through the two sinuses, and a large "pus-clot" was removed, which appeared to have filled the joint to painful distension. Suppuration followed, and the joint rapidly recovered, the lad being able, in six weeks, to move about by means of a stick, the joint being entire. There were no indications of bone disease in this case.

After making comparisons between these several cases, the author drew the following practical conclusions: That joints might be opened with advantage—1st. In cases of chronic inflammation of the synovial capsule of a joint, with effusion into its cavity, and pain; especially if these symptoms shall have been of long standing, have resisted ordinary remedies, and are associated with marks of declining health, as in the first case. 2d. In cases of acute or subacute synovitis, where the symptoms are unusually severe, and the external coverings of the joint indicate a tendency to ulceration; or where, after a reasonable period, the symptoms do not remit, but indicate the existence within the joint of matter, which, from its becoming a source of irritation, threatens to produce more serious mischief, as in the eighth case. 3d. In cases where the joint is occupied by bony or cartilaginous *débris*, which, from the small size of existing sinuses, cannot find exit: and 4th. In cases of carious disease of the bones, in which, from diminution of pain and secretion, as well as from other confirmatory symptoms, the disease in which the local affection has originated, shall appear to have exhausted itself, as in the second and fifth cases. He condemned the practice (except for the purpose of relieving severe pain) in all cases in which a chance remains that the joint will recover without; and especially in what are termed "strumous" affections of the joints, so long as the continuance of profuse discharge indicates that the constitutional disorder, in which it is presumed to have originated, has not burnt out; and in the event of this becoming exhausted, only when the persistence of sinuses but slightly discharging beyond a reasonable time might lead the surgeon to suspect either the existence within the joint of some dead and irritant matter, or the want of some general stimulus to final and reparative action, which, connecting a diseased sac with an external wound would supply.

Art. 74.—*On Hyperæsthesia in Rickets.* By Dr. Betz.

(*Floriep's Notizen*, Bd. i, p. 231, 1856; and *Medical Times and Gazette*, Oct. 25, 1856.)

Dr. Betz calls attention to those cases in which young children often whine and cry without any obvious reason, and shrink from all contact, while those who are old enough complain of tenderness and sensibility of the entire surface. This condition he agrees with Wunderlich in attributing to rachitis. This hyperæsthesia has its seat in part in the cutaneous nerves, and in part in the nerves of the bones and periosteum, those of the latter organs being especially concerned both in the pain resulting from pressure, and in the paroxysm of spontaneous exagge-

rated sensibility. This condition is an early accompaniment of the rickety state, existing in different amounts of severity, but not entirely disappearing, unless the rickets have become cured. A catarrhal condition is also always present, manifested by increased discharges from the bronchi, nose, mouth, stomach, or intestinal canal, just as the hyperæsthesia of adults, *e. g.*, odontalgia, is followed by abundant secretions. With the increase of sensibility is sometimes conjoined an increased hyperæmia of the enlarged ends of the bones, for in minute examination of rickety children, we find that there are slight variations in the volume of those bones, corresponding to the state of the sensibility.

This hyperæsthesia is made known to us by the following signs. Both older as well as young children begin crying without apparent reason, and cry both much and often. Even gentle handling gives them more or less pain, and especially at the parts where the bones are but slightly covered, as the wrists, and sides of the thorax, particularly at the swollen points of contact of the ribs with their cartilages. The pain induced by pressure on the hypochondria is due to this hyperæsthetic state, and not, as is often believed, to enlarged mesenteric glands or pleuritis, although this last sometimes gives rise to similar sensibility there. Not only are the superficial bones thus painful, but also others that are covered with muscles, as the femur. The cranial bones may also suffer, and the children be unable to bear any contact, such as combing or pommading the hair, or the pressure of a cap. Hyperæsthesia of the jaws is often accompanied by discharge from the mouth, and is attributed to toothache when no carious teeth exist. The mouth is hot and irritable, and sensitive to the temperature of food and drink; and the children use the incisor teeth so as to avoid bringing the food in contact with the sensitive periosteum of the toothless portion of the jaws. Rickety children are fond of crossing the legs while sitting, as this relieves them of a painful weariness of the limbs, and this is also one of the signs of hyperæsthesia. Although this hyperæsthesia principally affects the nerves of the bones and periosteum, increasing or diminishing according to the amount of hyperæmia, the cutaneous nerves may also suffer from it. The author is not certain whether or not spontaneous increased sensibility to pain be present in these, but he has remarked their greater excitability, as shown in the increased ticklishness of these children.

Art. 75.—*On a new method of treating False Joint.*
By Mr. Jordan, Surgeon to the Royal Manchester Infirmary.

(*Medical Times and Gazette*, Sept. 13, 1856.)

The following remarks are reported by Mr. W. H. Bellot, as having been made, not by Mr. Jordan himself, but by M. Nèlaton, in one of his clinical lectures:

"Mr. Jordan, surgeon of the Manchester Royal Infirmary, is the inventor of this method, and he has taken advantage of his sojourn in Paris to propose to M. Nèlaton the application of this happy invention. Mr. Jordan has already been able to obtain a cure in a desperate case,

treated in vain by many other surgeons. Observe, in a few words, in what this method consists. In the first place, the bone must be uncovered, as in the cases where it is intended to practise the resection of the two ununited fragments. When the bones are reached, a vertical incision must be made upon the periosteum, commencing higher or lower upon the shaft of the bone, and terminating where the fracture ends. Each fragment is treated alike; the periosteum is dissected from every part, that is to say, separated from the bone. This dissection ought to be made with the handle of the scalpel, and by little blows; it is a little tedious, but we must not employ the blade of a bistoury, because then we infallibly cut the vessels of the periosteum, which often perforate at the same time this nourishing membrane, and thus expose us to fail in our object. We must not forget that, when there is a diseased condition in a bone, as in a false joint, the periosteum is thickened, more turgid, more vascular, and more easily separated from the osseous substance. After this dissection, a kind of periostic flap is left, like the sleeves of our coats or our shirts. For the other fragment a similar operation must be performed, taking care to push the dissection to a rather less extent. Secondly, the ends of the broken bones must be cut off, and here the same instruments are employed as in an ordinary resection—the saw, &c. Every portion of bone which is covered with bony stalactites ought, as much as possible, to be removed; and it is known that these stalactites appear precisely at the point where the periosteum has been destroyed or altered from the injury, at the time of the fracture in general. One centimetre (which is not half an inch) and a half, or two centimetres of each fragment, ought to be cut off. Thirdly, one of the ends of the bone is to be inserted into the periostic sheath of the other, and then a suture at the free extremity of the flap, and the periosteum is disposed in such a way as the union of the bones allows. The edges of the incisions of the soft parts are then brought together, the limb supported in a suitable dressing, and the operation is completed as in an ordinary case.

"In the case where a complete dissection of all the periosteum cannot be made, Mr. Jordan has proposed another plan. In this case the bone is denuded of two little periostic flaps, which answer to the little flaps of skin in the amputation of M. Senoir; the other fragment is denuded upon the side opposed to that of the first fragment. In the second place, the two fragments must be cut diamond-shaped; there are thus, as it were, two beaks of a flute opposed one to the other; they are faced (or, as we should say, dovetailed together), and they fold the periosteum all round. It is evident that this last proceeding gives the same result as the preceding one; it would, perhaps, be more difficult to maintain the ends of the bones in immediate contact.

"Does not this proceeding offer something new? Authors, or rather surgeons, have employed friction, needles, the seton, the ligature, resection, abrasion, scraping the ends of the bones, and, lastly, cauterization. White, and other surgeons, have spoken well of scraping the periosteum, but they have not formed a clear idea upon the point. Have they shown, what Mr. Jordan has truly made a happy invention, and which may admit of numerous applications, that is, the auto-

plastic plan applied to the periosteum? When we reflect that we often see in the hospitals patients having pseudarthrosis, undergoing a great number of surgical operations, without any benefit, we ought to hail with delight a plan which is based upon sound physiological data, and upon a clinical fact, followed by success. Finally, we must not omit to say that Professor Nèlaton has accorded it his approbation, and that it was with great regret that he was not able to employ it upon the patient with respect to whom he had shown to his auditory the plan of Mr. Jordan."

Art. 76.—*On Plaster of Paris Bandages in Fractures.* By Dr. Weber.

(*New York Journal of Medicine*, May, 1856.)

Dr. Weber calls attention in this paper to the practice of the celebrated Russian surgeon, Prof. Pirogoff, of using bandages soaked in plaster of Paris solution, in the treatment of fracture. Dr. Weber gains his information from the 'Deutsche Klinik,' for 1854, and from a few cases in which he has tried the plan in his own practice. He says—

"The following articles for bandages are wanted:—long, old, hospital stockings, opened at the seam—old drawers, jackets, or waistcoats of linen. For fractures of the thigh,—belts which can go round the pelvis one and a half time; old linen, cotton, and cushions filled with lint or flax (to fill up depressions round the ankles, &c., &c.); splints of different lengths, out of two to three layers of the coarsest linen, and strips of the same material.

"The splints must be two to eight fingers broad, and a little longer than the injured limb;—the strips ought to be two to ten inches broad, and reach two to three times round the limb.

"At last a quantity of plaster of Paris, perfectly dry and finely pulverized, and cold water, with brushes, are to be kept in readiness.

"It takes some practice to make the solution not too thin nor too thick, so that it dries neither too slowly nor too fast. Equal parts of water and plaster will be the best proportion. When the application of the bandage takes up more than ten minutes, a few drops of carpenter's glue will retard the process of hardening, for a quarter of an hour and longer. On application of the plaster of Paris bandage, the injured limb is first covered with dry linen; the depressions and projections are filled with cotton; extension and coaptation are made *lege artis;* and then the splints, soaked in the solution, are applied lengthways close to the limb, and fastened crossways by the strips. Instead of the strips, a roller can be used, which has to be covered with the solution by means of a brush, gradually, throughout the time that it is applied.

"At the exterior margin of the limb the splints are applied; so that a small space of an eighth in width is left open. A piece of tape soaked in oil marks this space. The strips are also oiled crossways, in their middle, so that the solution is not taken up there—the oiled parts must fit the line of the tape; in this way, a small space is

left open, and uncovered by the plaster of Paris, so that the bandage can either be made tighter, by application of a new roller, or easily cut open, to be removed. The plaster of Paris bandage is well adapted to the quick construction of capsules, for the transportation of the injured."

ART. 77.—*On the influence of Phosphate of Lime in the formation of Callus.* By M. MILNE EDWARDS.

(*Comptes Rendus*, xlii, p. 631; and *Med.-Chir. Rev.*, July, 1856.)

The question of aiding the formation of callus by the administration of phosphate of lime has recently been revived in Paris, and the author of this paper alludes to some experiments tried by M. Gosselin at the Hôpital Cochin, especially in cases of fracture of the arm, which are sometimes so long in uniting. In the six cases observed by him the result seemed satisfactory, inasmuch as the apparatus could be removed in from twenty-seven to thirty days, the fracture appearing quite consolidated. As, however, in these cases, the condition of the callus could not be verified, M. Edwards undertook a series of comparative experiments on animals. Fractures, as nearly as possible alike, were executed upon dogs and rabbits of the same size and strength, to some only of which the lime was administered. The phosphate employed was prepared by the calcination of bones, and consequently was combined with carbonate. The results were decidedly favorable; and the author believes that the phosphate may be usefully employed as an adjuvant, expediting the union in ordinary fractures, and tending to prevent the non-consolidation of others.

From another communication,* it appears that in one of M. Gosselin's cases of fracture of the lower third of the humerus, complete consolidation occurred in thirty days. He administers as a minimum dose half a gramme per diem.

ART. 78.—*A case of universal Anchylosis.* By Dr. H. P. C. WILSON, of Baltimore.

(*The Philadelphia Examiner*, June, 1856.)

This case is described as a rigid, anchylosed human skeleton, the result of rheumatism.

"E. E— was admitted to the almshouse in May, 1846. Was then 21 years old. Was a native of Germany, and had come to this country some three years previously. Had been married twice. By first husband had two children, both dead. By last husband had one child, still living. Two years before admission, was attacked with rheumatism, with which she suffered uninterruptedly with greater or less severity up to the time she came in. Was a labouring woman, and had to undergo much exposure, and endure many privations to obtain a support for herself and child. Her second husband being dead, and her disease, from having been acute, becoming

* 'Gazette des Hôpitaux,' No. 150, 1855.

chronic, so that her joints began to stiffen and incapacitate her for labour, she was compelled to take refuge in the Baltimore City and County Almshouse.

"When admitted, could help herself in various ways; could feed herself, turn in bed, walk, and perform most of the other motions of which the joints are capable, but most of them with difficulty, and none with the facility belonging to healthy, uncomplicated joints.

"She went on from bad to worse; and when I took charge of the hospital, in March, 1855, I found her lying on her back, without the ability to move a single joint in the body, save a very partial motion of the lower jaw, and the costo-vertebral articulations. Her hands were pronated, and her forearms flexed upon the arms, and resting upon the upper part of the abdomen. The soles of her feet were applied one to another. Her legs were flexed upon her thighs, and her thighs upon the pelvis. This, I am told, has been her position, from soon after the date of admission until the date of death, a period of nine years, during which time she has remained a rigid, motionless being. Dry gangrene had taken place in many of her fingers and toes; and in this dry parched state were twisted upon themselves in various ways, so as to resemble more the talons of birds of prey, than what they were.

"The various functions of animal life were performed well. Slept well, appetite good, circulation, defecation, and urination all good. Was a picture of patience, and seemed not to suffer a great deal, except at certain periods, as during stormy weather. Was fed on liquids, being incapable of mastication.

"She died of typhoid fever, supervening on scurvy, July 9th, 1856.

"By inspecting the skeleton of the above subject, now in my possession, the inter-articular cartilages of the upper and lower jaw will be found completely ossified; with such an amount of bony matter thrown out in and around the joint as to allow but very partial motion. The history of the case substantiated the same during life.

"The occipito-atloid articulation is so anchylosed, as to blot out all evidences of a joint having ever existed.

"The inter-vertebral substances are converted into bone, and the spinal column thus changed into a rigid inflexible pillar.

"The sterno-clavicular, and scapulo-clavicular articulations are completely obliterated, the three bones being united into one, without the trace of a joint.

"The xiphoid and costal cartilages are all changed into bone.

"Each humerus is anchylosed to its scapula. Each radius and ulna to its humerus, and to each other. Each carpus is as a single bone, firmly anchylosed at the wrist-joint. Each metacarpal bone, with its phalanges, is as one firm, inflexible bone. Similar to the wrist, and hand, and fingers, is the anchylosed condition of the ankle, foot, and toes; and as for the radius, ulna, and humerus, so for the tibia, fibula and femur.

"No joint in the body then was capable of the slightest motion, save the two above mentioned, and in these motion was but very partial. The bones were exceeding light, not weighing one third as much as their counterparts in the healthy subject. The earthy matter was apparently wholly removed from the cancellated structure.

"It is to be regretted that circumstances prevented me from making a careful autopsy of this subject. No doubt ossific matter would have been found extensively deposited in and about various organs (especially the circulatory system), to add additional wonder to this truly anomalous case."

(D) CONCERNING OPERATIONS.

ART. 79.—*Is it always necessary to resort to amputation when a limb is attacked with Sphacelus?* By M. BARDINET, of Limoges.

(*Presse Méd. Belge*, March 23; and *Dublin Medical Press*, April 9, 1856.)

The following is a *résumé* of M. Bardinet's memoir:

1. In this memoir I report eight new cases of sphacelus (two of the finger, three of the forearm, and three of the leg), in none of which amputation was performed. The task of eliminating the dead parts was intrusted to Nature, except that her operations have been actively aided by the employment of the ordinary disinfectants, and especially by the early resection of the dead parts near the eliminatory circle.

In these eight cases recovery took place.

Had amputation been performed, it is, on the one hand, extremely probable that a certain number of patients would have died; on the other, several of them would have been deprived, in consequence of the necessity of amputating above the eliminatory circle, of a portion of their limbs (the knee, for example, or the upper part of the forearm), which they are fortunate in having been able to preserve.

It is, therefore, not always necessary to amputate in cases of sphacelus.

2. We should, above all, be extremely cautious in having recourse to amputation in cases of spontaneous gangrene—first, because in such cases, whatever we do, and even after the establishment of the eliminatory circle, we can never be sure that the gangrene will not reappear, and that we shall not thus needlessly add the pain and dangers of a serious operation to those of the original disease.

3. Because the fear of amputating in parts whose vessels are diseased obliges us to carry the section up to a considerable height, and thus involves, sometimes very uselessly, the sacrifices of parts which might have been preserved, and the loss of which is to be lamented.

4. Because the gangrene may attack several limbs in succession, and even all the limbs, of which I have quoted two examples, and we should then find ourselves compelled to perform a series of sad mutilations.

5. Because, on the contrary, in confining ourselves to cutting away the dead parts near the circle of elimination, we perform an operation which is always practicable and always useful, as it liberates the patient from a focus of infection.

6. Because we avoid the risk of performing an amputation, all the benefits of which will be lost if the gangrene makes fresh advances.

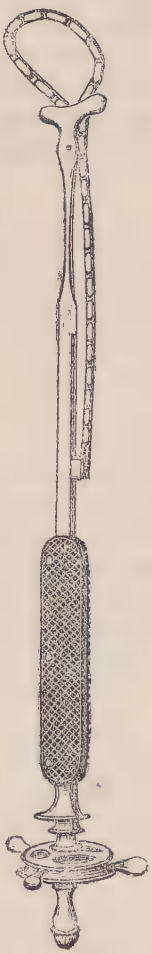
7. Because, in adopting the new mode, we do not unnecessarily remove parts which the patient is much interested in preserving.

8. Because we have still the power of performing amputation if it should become necessary.

ART. 80.—*Some account of the "écraseur" of M. Chassaignac.* By Mr. T. SPENCER WELLS, Lecturer on Surgery at the Grosvenor Place School.

(*Medical Times and Gazette*, Oct. 11, 1856.)

"The instrument which M. Chassaignac uses," says Mr. Wells, after some introductory remarks, "is made by an instrument-maker named Mathieu, and costs 48 francs. M. Luer has contrived one on the same principle, but of superior construction, for which he charges 80 francs. Both these instruments, however, appeared to me to be inferior to the one here figured, which is made by M. Charrière, and costs only 30 francs. In all these instruments the essential part is a sort of blunt chain-saw, which is tightened in M. Charrière's instrument by a screw, in the others by a rack and pinion. The great objections to both the latter are, that the chain passes through a closed channel which is difficult to clean or keep dry, and it is not passed through very easily, or fastened readily. Comparatively clumsy, more complicated, and dearer, I cannot doubt their inferiority.



"If it were wished to give this instrument a Greek instead of a French name, it might be called sarcotrite or histotrite, flesh or tissue breaker or crusher. It is intended to replace the knife on the one hand, and caustics or ligatures on the other, when we have to remove parts of the body or morbid growths, where considerable hemorrhage may be looked for. In a word, it is intended to prevent the loss of blood in surgical operations. The tongue has been removed; the neck of the uterus amputated; a number of erectile tumours and polypi naso-pharyngeal, uterine and rectal, have been taken away, we are assured, without the loss of a drop of blood. A full account of these operations, of the origin of the method in 1850, and its advance to the present time, with detailed directions for the use of the instrument in its various applications, will be found in M. Chassaignac's 'Traité de l'écrasement linéaire,' a book of 560 pages, with 40 woodcuts, which has been published this year by Baillière, of Paris, for 6 francs. There is a copy in the library of the Royal College of Surgeons.

"The action of the instrument, though slower than that of the knife, is much more rapid than that of the ligature, and its action is direct; not indirect like the ligature, which only divides tissues by the process of gangrene it induces. The *écraseur* first condenses the tissues it acts on, and then divides them with extreme regularity. The wound does not appear at all bruised or torn. When it acts on an artery, it first divides the two internal coats, which are folded up in such a manner as to plug the vessel. The closure is assisted by the agglu-

tination of the outer coats, before they are divided, and after separation has been effected, the closure is so perfect that the channel cannot be opened by blowing forcibly through it. Experiments have been made at the Veterinary School near Paris, and the carotids of sheep have been divided without loss of blood. There is nothing surprising in this, when we remember how seldom severe gunshot, lacerated, or contused wounds bleed; that a limb may be torn off by machinery, and no blood be lost; and that *bites* are very rarely attended by hemorrhage. The lower animals have no occasion to apply a ligature upon the umbilical cord of their young. They simply bite it through, and the action of the *écraseur* is much more like that of biting than of crushing.

"My personal experience of the use of this instrument in the living human body amounts only to three operations I saw M. Chassaignac perform—the removal of a portion of the tongue, a testicle, and a mammary tumour. In the first case, about a third of the tongue was removed, on account of supposed malignant disease. The man was not under the influence of chloroform, and the operation occupied twenty minutes. It appeared to be very painful, although we are informed that the pain is not in general complained of after the first tightening of the instrument benumbs the parts. There was some bleeding, which was explained by the dresser who had continued to tighten the chain, having done so too fast, and by the patient having jerked his head at the conclusion of the operation, and separated the last shreds of the tongue suddenly. A quarter of an hour afterwards I followed the man to the ward, and found him bleeding profusely. I could see a small artery jetting freely at the lower part of the wound. A Sister of Charity was supplying the man with lumps of ice to keep in his mouth; and she told me that, expecting what would happen, she had the ice all ready by the time the man returned from the theatre. She said she had seen a great many of these operations on the tongue, perhaps fifty; that they occurred almost every week, and that there was troublesome bleeding in a large proportion, perhaps about half or rather more; but that ice always succeeded in stopping it.

"In the second case a testicle was removed, and not a drachm of blood was lost, though we could see the spermatic artery pulsating very distinctly at the spot where it had been divided. Two *écraseurs* were used in this operation, the chains being passed through an opening made by a trocar in the upper part of the scrotum, above the testis and behind the chord. One divided the chord and integuments horizontally, the other divided the scrotum vertically. Thus a very large portion of the scrotum was removed, and there was not enough left to recover the remaining testicle. It appeared to me that if the *écraseur* were used at all in such an operation, the scrotum should certainly be first divided with the knife, so that none should be lost, and the *écraseur* be merely used to divide the cord.

"In the third case I could not understand why the intrument was used at all. A small mammary tumour was to be removed, and to get the chain around it, it was necessary to lay it bare with the knife. Of course the principal vessels were divided in this process, and a

very few more touches of the knife would have sufficed to separate the tumour when the *écraseur* was applied.

"I found that of upwards of a hundred operations on piles with this instrument, one had proved fatal. The man was suffering at the time from secondary syphilis.

"The impression left on my mind from what I have seen and heard, and from my own trial of the instrument on the dead body and on the arteries of sheep and a calf, is that, if slowly and properly used, hemorrhage will very rarely follow its application, but that its use will most likely be restricted to the removal of piles, polypi, and such erectile or malignant growths as could not be removed by the knife without a probability of dangerous hemorrhage. In such cases the superiority over the ligature in the time gained, and the non-liability to purulent or putrid absorption is self-evident. Whether it will answer as well as a wire heated by galvanism experience alone can decide."

Art. 81.—*On the employment of Setons.* By M. Bouvier and others.

(*Bull. de l'Académie*, t, xxi, pp. 52-249.; and *Med. Times and Gazette*, Aug. 2, 1856.

This not long since formed the subject of an animated and prolonged discussion at the Académie de Médecine. It led to learned dissertations on the antiquity of the doctrine of revulsion and various other topics to which we cannot advert; but we may sift out from the wordy mass the few practical observations that were made upon the subject.

M. Bouvier introduced it by adverting to the objections to the employment of setons entertained by many modern practitioners, and attributing any ill effects they may have observed to the mode of operating. That which he himself employs is much less painful and quite as efficacious as the old mode. He uses a very narrow needle, with a lance-shaped point, which, in place of a skein of silk, carries only a small thread, covered with some impermeable substance, such as that which forms the gum-elastic bougies, but somewhat more supple. It is let in at a slit at the end of the needle. The passage of this small thread causes little or no pain, and its polished surface allows of its being kept very clean. If an insufficient amount of irritation be induced, another thread, or even two or three, may be placed in juxtaposition with the first, and in this way we are able to dose or regulate the amount of irritation. In this way the filiform seton may, in a great number of cases, be employed as a substitute for the ordinary painful seton, while it leaves far less considerable cicatrices. Gutta percha is found to be too hard a material, but flexible chains of gold, silver, or platinum may be advantageously employed, especially as precautionary setons in relapsing ophthalmia. As in the case of earrings, the suppuration ceases around the foreign body, and no inconvenience, beyond the necessity of attention to cleanliness, is caused to the patient. M. Bouvier presented several children to the Academy

who had suffered from ophthalmia, and had derived benefit from the employment of filiform setons.

M. Gerdy observed that the employment of the seton is so convenient that it is frequently had recourse to ; but in his own experience he has found it not only giving rise to circumvicinal inflammation, but also augmenting the original mischief, as, for example, in ophthalmia and amaurosis—so that the result following its employment has sometimes proved quite opposite to the one proposed. For these reasons he has abandoned the use of the seton. M. Malgaigne observed that, originally a believer in the efficacy of exutories, he had recourse to them very many times under the form of seton, moxa, or issue; but he has come to the conclusion that their beneficial effects are very doubtful indeed—the success seeming due to their prolonged employment having been really due in many cases to mere expectation. He has long studied the action of setons and moxas on diseased joints, and has arrived at the conviction that if good effects do not result from their employment during the first few days, they are of no service. For years he has now left off employing setons, the moxa, or prolonged issues. He has been long struck with the great abuses that result from the retention of issues. He particularises their retention, for he is far from denying the utility of the moxa or cautery in inducing the cessation of pain. But we must not confound the influence of a sudden irritation, or of one even prolonged for some days, with that of setons or issues remaining *in situ* for months or years, and to which nature becomes so habituated that patients are compelled to retain them, their operation becoming, however, as inert as that of earrings. Since he has held the doctrine of the inutility of exutories, he has in vain requested numbers of practitioners and pupils to see whether they could tax their memory with a well-authenticated example of their successful employment in one case in ten or even one in twenty.

M. Velpeau observed that without being a great partizan of the seton, he admits its therapeutical power ; but he regards the filiform suture now recommended as of very questionable efficacy, and approaching the fallacies of homœopathy. Like the homœopathic remedies, these setons are employed in chronic affections, the various phases of which are little known beforehand ; which are sometimes cured spontaneously, and which are successively treated by a crowd of remedies, the last given, if it happen to have arrived at an opportune time, reaping the whole credit of the case. M. Velpeau cannot, however, join with M. Malgaigne in his wholesale reprobation of setons and issues. As regards their employment in diseases of the eye, the following are the conclusions he has arrived at : "All revulsives cannot be indiscriminately resorted to, each being more fitted for certain forms of disease. Blisters are of especial use in acute and superficial ophthalmias, such as conjunctivitis ; issues in the chronic affections which engage the ball of the eye; while the seton should be reserved for some of the diseases belonging to the latter category, but especially for affections of the cornea, and those of undefined seat. In these even they are rarely to be used at first. I usually employ them only in obstinate cases, and especially in amaurosis, complex

forms of disease, the precise anatomical characters of which can hardly be ascertained. It is in such cases, when the amaurosis is not dependent upon deep-seated disorganization of the eye, but upon some unseizable modification of the membranes, that I apply setons to the nape, and, I add, with indubitable advantage, after the failure of numerous other remedies." To sum up, M. Velpeau employs the seton in amaurosis when it is not sympathetic of organic lesion or visceral disturbance, depending upon certain little-known modifications of the eye, or the nerve or brain; and in keratitis, tending to chronicity and resisting bleeding, blisters, collyria, calomel, and purgatives. When perforation has been threatened, he has found very remarkable effects result from the seton. In vascular keratitis, though still sometimes proper, it is in general less useful; and in conjunctivitis it is still less indicated. M. Clot-Bey stated that the Arabs from time immemorial had employed small setons in their treatment of diseases of the eye. They are placed at the external angle of the eye, over the eyelids themselves, or in their vicinity. For several days there is considerable fluxion around the suture, and this is followed by moderate suppuration. He has frequently followed the practice with advantage both in Egypt and in France. A noose of black silk is passed into a fold of the skin, and may be easily hid by the hair, its presence not preventing the patient following his occupation.

M. Bouley observed that the seton is much used and abused in veterinary practice. The horse offering a remarkable predisposition to suppuration, this follows in a few hours after the application. By a coincidence, the explanation of which is not attempted, the production of artificial suppuration is attended with a cessation of that which may elsewhere exist, and this may give rise to the abuse of the seton; but it has also its intelligent use. One point M. Bouley insisted upon, viz., the different mode of action of the seton according to the degree of gravity of the disease. If the affection is simple and of regular course, a suppurating phlegmon is formed around the seton in a few hours, while, when a grave condition is present, likely to prove fatal to the organism, there is complete absence of all reaction. The seton also indicates other general conditions, *e. g.*, medicinal saturation. Absorption of mercury never induces salivation in the horse, and the seton becomes a precious means for indicating saturation—the suppuration becoming grayish and very fetid. It also facilitates the exploration of medical constitutions. At certain periods the most simple wounds of operations have a tendency to become gangrenous, so that the operation of castration has sometimes acted like a true epidemic, while the condition of the wound resulting from a seton would have warned against our undertaking any operations. M. Bouvier has stated that a seton acts more by the irritation it induces than by reason of the suppuration that results; but certainly this is not the case in the horse. A seton of three metres long yields about 48 grammes of pus per diem; and six such, which are not uncommonly applied, would yield 288 grammes; or for the six days, which constitutes the medium time of application, 1728 grammes. A horse losing this quantity is in an analogous condition to that of a cow, from

whose udders a similar quantity of the elements of the blood are abstracted. Such cows, though their appetite and digestive powers are so active, do not become fat; and so too the seton is a true spoliative agent, and an exutory in the truest sense of the word, removing from the blood a notable portion of its constituent elements, and operating as a resolvent. By the activity it imparts to interstitial absorption it may cause the disappearance of morbid products that have not acquired a too great tenacity.

M. Piorry, during the first twenty years of his practice, habitually employed setons and the other means of inducing permanent secretions; but he now believes that he never obtained in such cases any other results than were derivable from regimen, repose, and the other means simultaneously employed, and he has now well-nigh renounced their use. He never has found any inconvenience to result from their removal from the numerous patients who come to him bearing them. Not only does he regard means of artificially inducing suppuration as useless, but he believes that they may often act mischievously upon the fluids of the body. Thus persons who have long retained them, and who have become pale and cachectic, resume their colour and good looks when the suppurating surfaces are dried up.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 82.—*Extensive Absorption of the Bones of the Head.*
By Mr. CÆSAR H. HAWKINS, Surgeon to St. George's Hospital.

(*Lancet*, June 21, 1856.)

The two cases which are here reported were narrated at the meeting of the Royal Medical and Chirurgical Society, held 27th May, 1856. In one of them the absorption was followed by hernia cerebri.

The first case narrated was one of scrofulous caries, in a young man aged 24, in which, quite contrary to the usual chronic character of that disease, most extensive destruction of the bones and soft parts of the head took place in a very brief period. Within the space of ten weeks from the first sensation of pain over the lower part of the right parietal bone, more than half the cranium became affected on both surfaces, in some parts the bone being entirely absorbed, having large openings. The entire parietal bone, the right half of the occipital, the squamous and mastoid portions of the temporal bone, and a considerable part of the frontal, with a part of the greater wing of the sphenoid, were thus affected in the short period mentioned.

The second case related was that of a man, aged 36, who was admitted into St. George's Hospital, under the late Mr. Keate,

February 2d, 1832, with a pulsating tumour, nearly five inches in diameter, on the upper and posterior part of the right side of the head. It was soft and elastic, with a well-defined boundary; in its centre a round fungus projected, through an opening in the scalp, of the size of a small walnut, in which pulsation was also evident, and the apex of it looked like layers of coagulated blood. On the opposite side of the head was a similar depression, about three inches in circumference, which was soft and elastic, and pulsated strongly, the edges of the bone not being abrupt or well marked round the aperture; and pulsation could also be felt in another smaller depression near this large one. He had lived freely, had been in tropical climates, had been twice salivated for syphilis, had a tendency to rheumatism, but otherwise enjoyed good health. Two years and a half before his admission, after sleeping on the grass in the sun, he suddenly felt acute pain in the head, which continued some days, and was followed after some time by a depression in the situation of the present tumour, of sufficient size to admit the end of the little finger. This depression increased in size during the next six months, and at length the tumour took its place. Eighteen months before his admission pulsation was first observed in the tumour; at that period the pain and general symptoms were so severe as to lay him up. Poultices were applied, and the tumour was punctured with a lancet, the effect being to let out a little blood simply. The puncture healed, and a month afterwards the same thing was repeated with the like result. Eight weeks previous to his admission, some severe head symptoms occurred, and after being bled from the arm, and having leeches applied to the tumour, it was again punctured, and from that time the present fungus began to protrude. On his admission, some difference of opinion existed as to the seat and nature of the tumour; it was twice ligatured. On the twenty-fifth day after his admission, numbness of the extremities and dimness of sight came on, with giddiness and sickness; on the thirty-third day the left side was more or less paralysed; on the thirty-ninth completely so, and the sphincters were relaxed; on the forty-third he was comatose, and died on the forty-seventh. Examination after death showed the anterior part of the calvarium to be much thickened, in some places to the extent of half an inch, the bony tissue being firm and dense, like ivory, the diploe being obliterated; while towards the posterior parts of the head the bones were very thin and presented large apertures, where, during life, pulsation could be readily felt. The external surface of these bones was rough and mammillated, and the internal more porous than natural. The dura mater adhered completely to the integuments around the opening in the scalp, and the arachnoid and pia mater were also adherent to the inner surface of the former. An opening conducted from the centre of the fungus into a large abscess in the right hemisphere, almost as deep as the lateral ventricle; this abscess had discharged itself during life. It was evident that the disease commenced in the bone, and not in the brain, from the fact that the depressions preceded the protrusion, from the extensive disease of the bones in other parts, and from the fact that below the smaller apertures in which the pulsation of the brain was seen without protrusion,

the dura mater and the brain were quite unchanged. The narration of the cases was accompanied with many valuable practical comments upon the rarity of these two affections, their modes of production, and, in the latter case especially, the probable nature of the exciting constitutional cause. The communication was illustrated by many pathological preparations of the parts involved.

Art. 83.—*Extensive injury of the Brain, with remarkable absence of the usual symptoms.* By M. Carminati.

(*Il Raccogl. Med. de Fano*; and *Gaz. Méd. de Paris*, March 15, 1856.)

The remarkable feature in this case is that the patient lived six months in the full enjoyment of his several functions, although two thirds of one of his cerebral hemispheres was entirely disorganized.

Case.—A man, æt. 38, strong, and the father of five children, was struck on the head with a pitchfork on the 4th of October, 1854. All consciousness and sensibility was destroyed at the time. On examination the scalp was divided to the extent of about two inches towards the posterior part of the right parietal bone; the bone was fractured; and a considerable portion of cerebral substance, medullary as well as cortical, was exuding from the wound.

Some hours later, the consciousness returned, correct answers were given to questions addressed to him, and objects were distinguished, though indistinctly. The bone was elevated, ice was applied to the head, a purgative given, and a considerable quantity of blood abstracted.

5th.—Some fresh portions of brain came away. No fever.

6th.—Complete apyrexia.

The patient continued to progress favorably until the middle of November, when he was seized with pemphigoid erysipelas of the face, with general symptoms.

December 22d.—The last-mentioned symptoms have entirely disappeared, and the patient now appears to be well in every respect, except that he experiences a degree of feebleness in the lower extremities when walking. The wound in the head, however, has not healed entirely, and a probe may be introduced to a considerable depth into the substance of the brain. He returns to-day to his usual occupation.

April 4th, 1855.—After some months of malaise, for which he sought no treatment, and which was always aggravated by errors of diet, he became comatose and died.

On opening the head, the meninges were found to be deeply injected, particularly on the left side, and a considerable amount of yellowish serum was lodged at the base of the brain and in the ventricles. The posterior two thirds of the right hemisphere were entirely disorganized, being of a tawny yellow colour, and in a semi-fluid state. In the anterior third of the same hemisphere there was an abscess containing from five to six ounces of pus. The rest of the brain was healthy.

ART. 84.—*A case of Encephalocele, with a tabular analysis of seventy-five cases.* By Mr. JOHN Z. LAURENCE.

(*Medical Times and Gazette*, Aug. 2, 1856.)

Congenital hernia of the brain is a rare malformation, and it is a still rarer circumstance for the subject of it to live for any length of time, especially when the protrusion was large. In the present case (which was read before the Medical and Chirurgical Society, 24th June, 1856), the tumour equalled in size the child's head, yet life was prolonged for 144 days, and in that respect it formed a more remarkable case than any which the author had met with in his researches for his table. The mother was healthy, and had previously given birth to five healthy children. The labour was natural; the child a female. At birth the tumour was not quite so large as the head. When first seen by Mr. Laurence, two months and a half after its birth, it presented a conical tumour as large as its head, apparently originating from the occiput and nucha, and measuring five inches and a quarter in length and three inches and a half from side to side. The walls of the tumour were very thin; it fluctuated freely to the touch, was very transparent, but there was no pulsation perceptible. The child had a vacant, idiotic aspect, was to all appearance blind, but was started by any sudden noise; the limbs were not paralysed; it was found dead in bed beside its mother. On examination after death, the tumour was found to contain the entire cerebellum and a portion of the cerebrum; these parts had been protruded through an opening in the occipital bone, which was oval in form, continuous with the foramen magnum, and measured (including this latter) two inches and a quarter from before backwards, and one inch and a quarter across. The paper was accompanied with a valuable analysis of seventy-five cases of this malformation, divided into three tables—the first, containing an analysis of fifty-three cases of encephalocele occurring in the occipital region; the second, an analysis of seventeen cases occurring in the frontal region; the third, an analysis of five cases occurring in the parietal and temporal regions. The dates of the cases ranged from 1677 to 1853.

ART. 85.—*The Condition of Vision the best test of the Squinting Eye.* By Mr. HOLTHOUSE, Assist.-Surg. to the Westminster Hospital.

(*Medical Times and Gazette*, June 28, 1856.)

"It is remarkable," says Mr. Holthouse, "that among the numerous writers on the subject of strabismus there should be so little accordance as to the best test for discovering the faulty eye in those cases in which the squint shifts from one to the other. To be convinced of this, one has only to refer to the works of the three latest English writers on the subject. Walton observes, 'It is not an easy matter to determine which is the defective eye, and the sound eye is sometimes operated on. When this cannot be readily ascertained, I place

the patient in front of me, at the distance of two or three yards, and direct him to cover one eye,—say the left,—and look at me with the other, keeping the head straight: the right eye will be in the centre of the orbit; I then direct him to uncover the left. Now, if the right, which has not been closed, is normal, it will keep its central position, while the left eye is turned inwards; but if it be deformed it will turn in, while the left will become straight. The experiment should be reversed.' Again: 'When a patient is under examination, he is generally excited, and exerts the orbital muscles unnaturally; and then it is out of the question to obtain a sight of the squinting eye even in a moderately quiescent state; and hence I have sometimes been obliged to wait until a second visit to detect the faulty eye.' Mackenzie follows Lucas's rule for discovering whether one or both eyes are affected. 'We are able readily to detect non-alternating as well as alternating strabismus, by desiring the patient to look steadily with either of his eyes at any object straight before him, while with one hand we hide the object from his other eye, but keep the hand sufficiently raised towards the temple to allow us to watch the movements of the eye which is thus shaded. Whether the strabismus is alternating or non-alternating, the shaded eye is distorted. If in such a case we close both eyes, and then suddenly raise the upper lid of either while the other remains closed, the one which is opened is seen to be distorted. If both eyes are suddenly opened, the pupil of the worse eye is discovered to be more distorted than that of the better eye. If, on trying these experiments, the eye which is shaded, or either of them, on being opened suddenly showed no obliquity, we would pronounce that eye to be sound.'

"Dixon observes, 'When both eyes appear to be affected with strabismus and to turn inwards, it becomes a question which eye ought to be operated on. Various optical tests have been suggested to enable the surgeon to decide this point; but it usually happens that a patient, when subjected to any of these tests, is so anxious and embarrassed, that he becomes very liable to a sudden increase of strabismus in the eye, which, on ordinary occasions, would be affected in the slighter degree; and from this cause the experiment may fail to infallibly determine the question. I believe the best rule is, to watch attentively which eye squints in the more decided manner when the patient uses both eyes in his ordinary way, and to operate on that in which the distortion predominates.'

"In my lectures on strabismus, published two years ago, I pointed out the law which determines the alternation of the squint; and since then I have had abundant opportunities of testing its value, as well as proving the inutility of all other tests. This law may be thus expressed:—The less the difference in the visual power of the two eyes, the greater the tendency of the squint to alternate; and, conversely, the greater the difference in the visual power of each eye, the less the tendency to shift.

"The visual power, then, is the only test that can be depended on, and the rule of practice would appear to be this:—In true alternating squint, where the power of the two eyes is alike, it is immaterial which eye is operated on; while in the false, and by far the most frequent

variety of alternating squint, that eye should be selected for operation the visual power of which is inferior.

"Shortly before my return from the East, I was requested by Dr. M'Craith, of Smyrna, to operate on a young Greek lady, who squinted very decidedly, though with which eye it was difficult to determine, as it continually shifted from one to the other; it seemed, however, to have a preference for the left. Walton's test failed completely; but vision was most perfect in the left; that is, in the eye apparently most affected; it was not bad in either, the patient being able to read with both, though a smaller type with the left than with the right. Notwithstanding the right eye seemed to be the straight one, I operated on it rather than on the other, owing to its less perfect vision. The correctness of the diagnosis was at once made manifest, by the extraordinary size and toughness of the tendon of the internal rectus, as well as by the rectification of the deformity in the other eye. The preference (if I may so use the term) of a squint for the better eye is a curious phenomenon that was noticed many years ago by Dr. Radcliff Hall, and is occasionally due to certain extraneous and sometimes appreciable causes. A little boy, 10 years of age, was brought to the public dispensary for a stye on the outer part of the left upper lid; the eye on the same side was also considerably inverted. At first sight, I considered that this was a case of single convergent strabismus of the left eye; but on placing a book before it, I found its vision quite perfect; while, on placing it opposite the other, or straight eye, he could with difficulty decipher the letters. This fact at once assured me that the latter was really the strabismic organ, and that the inversion of the opposite one was only temporary. In the course of a few days the stye had disappeared; and, as I anticipated, the squint had disappeared with it, and had been transferred to the opposite eye. I think there can be little doubt that the inflammatory condition of the eyelid in this case determined the strabismus to the good eye; for the movement of the lids, being in great measure regulated by that of the eyeball, the quiescent condition of the latter in the inner canthus would entail a corresponding condition of the former, and thus the pain arising from their movements be avoided. The bad eye was thus instinctively called into requisition, so that a superficial observer would readily have mistaken it for the good one."

Art. 86.—*On operations for Convergent Strabismus.* By Mr. Holthouse.

(*Medical Times and Gazette*, May 17, 1856.)

"Shortly before my departure for the East," writes Mr. Holthouse, "I was consulted by a gentleman who had been operated on some time previously for convergent strabismus, but who now was affected with a slight divergence of the eye operated on; this, together with the retraction of the caruncle, gave to this eye an appearance of rotundity and fulness not possessed by its fellow, and the symmetry of the two was thus impaired. The patient could bring the cornea into a position equidistant from the two canthi, and could even invert

it slightly; and the eversion appeared to be due rather to the new insertion of the internal rectus having taken place too far backwards, than to any hypertrophy, or over-action of its antagonist. Under these circumstances, I was unwilling to run the risk of increasing the fulness of the eye by dividing its abductor muscle, and was even doubtful how far such an operation would rectify the eversion. I accordingly pinched up a fold of conjunctiva with the subjacent fascia, internal to the cornea, and snipped it off with a pair of scissors, trusting that the contraction which would ensue from the healing of the wound might be sufficient to rectify the slight divergence. In this hope I was not disappointed, the greater fulness of the eye disappeared, the caruncula lachrymalis was drawn more towards the cornea, and the power of inverting the eye was increased. A small granulation made its appearance in the course of treatment, which required touching three or four times with the nitrate of silver. A month after the operation none but an ophthalmologist would have discovered any difference between the two eyes, and the patient took leave of me, highly gratified with the result.

"It is seldom one is called upon to remedy so slight a defect as that for which this patient consulted me. In more marked cases of abduction, following a too free division of the contracted parts in convergent strabismus, some such operation as that so ingeniously devised by Mr. Critchett must be performed; but I am of opinion that many cases, even of primary strabismus, where slight, might be remedied by such an operation as that described in this paper."

ART. 87.—*On a special point connected with the diagnosis of Hard Cataract.* By Mr. HAYNES WALTON.

(*Medical Times and Gazeste*, June 28, 1856.)

Under adult age the pupil is usually so black that any opacity is quickly recognised, and the existence of cataract at once detected; but later in life, if the power of vision be interfered with from any cause, the crystalline coloration which is then developed may deceive and induce the suspicion, if not the conviction, of the existence of cataract. Again, at the latter period, when cataract is quite incipient, and the central part of the lens is first affected, as it sometimes is, although not by any means so frequently as surgeons suppose, it may be impossible, in our present state of knowledge, to detect it, because of the "coloration," and, at best, only a broad guess can be made according to the subjective symptoms. The introduction of a case will serve as illustration. A lady, aged 75, desired Mr. Walton to examine her eyes, as an optician, to whom she had applied to have her spectacles repaired, pronounced, from the appearance of her pupils, that there was cataract. Certainly, if a brownish gray colour may be taken as indicative of this much-dreaded disease, the tradesman was justified in his supposition, as this was very apparent; but, being well aware of the possibility of deception, and the absolute necessity of a careful examination of a person

who, with such eyes, could walk readily into the consulting room, and, in front of a large window, on a bright day, take a seat without blundering, Mr. Walton reserved his opinion till after the necessary inquiry. He asked her to read with the eyes alternately, and putting on her glasses, a pair of 48-inch focus, the same very low power that she had used since such aid was required, she read rapidly, with the left eye, diamond type, and the still smaller characters on the dial-plate of my watch, while, with the other, only large print could be made out. A close inspection of the eyes did not discover any very marked difference in the crystalline lenses, till the pupils were dilated, when he perceived the disparity, which was not great, but yet unmistakeable. The remark of the optician induced her to compare the power of her eyes, and until this time she was ignorant of the existing defect, an occurrence not at all uncommon. It was evident, therefore, that in both eyes "coloration" was very marked. In the left there was nothing more. In the right was added the commencement of lenticular degeneration. It is difficult to account for the fact that an amount of colour so decided as to be apparent to an unprofessional bystander, and according to our notions of the physiology of the eye, more than enough to affect sight materially, did not produce a more decided result. That it has an effect by absorbing light, there can be no question; and its chief consequence is, the necessity for convex glasses in advancing life. From a very extensive examination of lenses extracted soon after death, Mr. Walton has found that the "coloration" is not uniformly in a ratio with the age of the individual, as in some persons it may be more marked at 50 than in others at 80, and he has even met with a difference in the eyes of the same individual. But this is only a confirmation of what may be observed in life, and with which he has been acquainted for years. A practical inference, therefore, is, that coloration is not a disease, not a progressive affection that destroys sight, but a slight natural change, incidental to age, and that cataract is a degeneration, a decay that progresses. It is well, however, to give some substantial proofs of the correctness of these views, and, in order to this, Mr. Walton refers to that which has been afforded by the labour of his colleague, Mr. R. Taylor, who has been investigating the matter microscopically. He writes: "In elderly people, without an exception, so far as I have observed, the lens assumes an amber colour, more or less deep. The age at which this change commences varies exceedingly. I have seen it distinctly present at 30, and very strongly marked at 35, while, again, it has been but slight in a person of 60. Generally speaking, it will be found at the age of 40; I have never failed to find it at 45. It appears to be more easily developed in the coloured races, and in persons with any admixture of black blood; but my opportunities of observation on this point have been very limited. The colour pervades the whole of the lens, but is most intense in the nucleus, and fades off gradually in the cortical layers. When the "coloration" is very intense, it impedes the transmission of light, so as to impair the sight, though the lens remains perfectly clear and free from opacity. Such persons see best in a bright light, and are frequently benefited by convex glasses, which concentrate the light. Notwithstanding the depth

of colour, I have never heard any complaint of a yellow hue being thrown over objects, as is the case in looking through a piece of yellow glass, nor is there any difficulty in distinguishing different shades, even of blue and green. The colouring matter, which is said to be iron, is in solution. There are not any pigment-cells or granules; which last, it is said, are found in black cataracts. The coloration does not appear to interfere in any way with the healthy condition of the lens; in the oldest which I have examined, from a woman, 93 years of age, the lens tubes, both nuclear and cortical, were perfectly healthy; though they, as well as the superficial cells, were tinged of a bright amber colour. In cataract, on the contrary, the lens is disorganised; the superficial layers are softened and broken up, so as, in advanced cases, to be reduced almost to the condition of a pulp, which renders the drop of water, in which it is examined, turbid and milky. The opacity is due chiefly to a quantity of fine molecular matter, the result of the coagulation of the albuminous blastema of the lens, which is found partly aggregated in masses, and partly studding the exterior, perhaps also the interior of the tubes, as well as, in many instances, filling the large globular cells which lie immediately within the capsule. Occasionally, in cases of long duration, crystals of chlorestine are found interspersed among the lenticular *débris*. The nucleus also undergoes a very remarkable change, becoming hard and dry to an extent very far from anything that is ever seen in the healthy lens of the oldest persons. The tubes are withered, atrophied, and brittle, and fall asunder and in fragments on the slightest touch of the dissecting needle. Their outlines are disfigured by deep, transverse, and longitudinal cracks and fissures, and by irregular nodules, probably of coagulated albumen, and in many instances they show a tendency to split into minute fibrillæ." It is evident, therefore, that on the recognition of these data, and the practical application of them, much error may be avoided, and the absence or existence of cataract rendered more certain, not to speak of the assistance that they offer in unravelling other ophthalmic disease; for lenticular "coloration" has been described as an objective symptom of other affections, "amaurosis" being one of these. It would answer no good purpose to tell of any of the many cases of "coloration" and impaired vision, not due to opacity of the lens, that have been sent by surgeons for operation, under the supposition that cataract existed, nor of other mistakes connected with the subject that have come under the author's notice, such as the extraction of lenses, not cataractous, but merely coloured. Mistakes are frequently made. In the case detailed, it is easy to understand that there had been defective sight in the left eye, from disease at the posterior part of the eyeball, how readily it might have been supposed that cataract was present. It may be received as a rule, that, if a person can see to read the smallest type with or without glasses, and discern distant objects clearly, the pupil being undilated, no matter how clouded the lenses may appear, cataract does not exist. After this is understood, the only point on which there can be difficulty is to pronounce whether, in any given case of defective sight, cataract is present or absent; and the solution of which, so far as it can be told, depends on the proper discrimination

of physical appearances, the distinction between "coloration" and lenticular degeneration rather than on any subjective symptoms, although these may greatly assist. With undilated pupils it is difficult, if not often impossible, to recognise the difference. Surgeons of the first eminence in this metropolis err respecting it; hence the necessity, whenever doubt exists, for dilatation. Then, in the expanded pupil, the presence of striæ or opaque bundles of fibres, which so commonly exist in the early stage of cataract, at the circumference of the lens, can at once be detected. "Coloration" is more central and browner, the light penetrates the lens, and the concentration of it is perceptible in the direction in which it falls. The opacity of cataract is more diffused and opaque, and reflects the light. In the first, vision is made worse by dilatation of the pupil, while in the other it is almost always improved, certainly always when the opacity is marked. Indeed, when the pupil is dilated, it is seldom that a correct conclusion cannot be arrived at. The exception is this: when the lenticular degeneration is yet slight, and has commenced in the centre, it may be impossible to detect it, that is, to be able to say with certainty that cataract is present, and the lapse of time only can decide. The late Mr. Dalrymple treated a gentleman for amaurosis. He had prescribed an arsenical preparation for some time without benefit. Mr. Walton was then consulted, and, after a long investigation, he decided that cataract was present, at least in one eye. This disease soon became palpable, and in time he operated on both eyes with the best success. There had never appeared the slightest amaurotic symptom. Can there be a stronger proof that there may be uncertainty in the matter? When vision is much affected by loss of transparency in the lens, the opacity must be palpable; therefore, when this is not readily detected, any material loss of visual power must be attributed to some other cause, and this applies especially to defective vision in the very aged, in whom the "coloration" is most marked, and when the eye, in obedience to the laws of mortality, which allows an exception, perhaps, only in the prostate gland, is apt to get shrunken, and also becomes, so to speak, vitally impaired. Several times, under these circumstances, Mr. Walton prevented the performance of a needless operation, and proved that a feeble retina was the defective cause. Mr. Walton has not found the ophthalmoscope of any service in this matter.

Art. 88.—*On the treatment of Traumatic Cataract.* By J. V. Solomon.

(*Assoc. Med. Journ.*, March 15, 1856.)

In a paper read before the Birmingham and Midland Counties Branch of the Prov. Med. and Surg. Association, Mr. Solomon, after giving an outline of the physiological anatomy of the lens and its capsule, which, he said, was of interest, by throwing light upon some of the nutritional changes of which the lens is the subject, and as affording a *rationale* of certain operations which are performed for their cure, defined traumatic cataract as an opacity of the lens or its

capsule, in consequence of a blow upon, or penetrating wound of the eyeball. Mr. Solomon then considered the subject under three heads.

a. In cases of traumatic cataract, attended by little or no inflammation, and where the capsule having been ruptured accidentally the lens is undergoing absorption, his practice is to break it up ten or fourteen days after the accident, and clear the pupil of capsule, and so prevent the formation of a capsular cataract within the area of the pupil. The operation is performed by penetrating the cornea with a fine needle, &c. (Keratonyxis). Where the case is complicated by an ununited wound of the cornea, his first care is to obtain union by closing the eyelids with strips of plaster, and enjoining rest of the organ. Prior to which any portion of recently protruding iris is returned within the anterior chamber by gently pressing upon it with the spoon end of the "curette," whilst the patient is under the influence of chloroform; but when that drug is contraindicated, or lymph covers the irident tumour, it must be snipped off, unless it should happen to be very small, with a pair of sharp-cutting eye scissors. When the wound is central, belladonna is to be immediately applied to the brow and a drop of atropine to the conjunctiva; but when such is not the case, the application must be delayed until cicatrization has taken place.

b. In cases where the cataract is dislocated against the back of the iris, or is pushing its way through the pupil, and is attended by severe ocular pain and inflammation, Mr. Solomon's invariable practice is to extract the lens by Gibson's operation, which, by removing a cause of irritation, alleviates suffering and accelerates recovery. In the event of these cases being treated only by the ordinary means applicable to internal inflammation of the eyeball, all the symptoms are protracted, and the pupil remains small and obstructed by thickened opaque capsule or organized lymph. Moreover, the deep-seated structures are prone to be affected by inflammatory disorganization. In a word, the eye is left, on the subsidence of the ophthalmia, in a very unfavorable condition for any operation that may be at any time undertaken with the intention of clearing the pupillary aperture, unless the canula scissors can be made of use. It is in this class of cases that chalky or bony material forms within the capsule.

c. With regard to cases of single traumatic cataract, occurring in an organ in other respects, as far as can be judged, healthy, the author advocates the operation of solution (Keratonyxis), on the grounds that it (1) removes a deformity which, to many persons, is a serious obstacle to their comfort and well-being in life; and that (2) it tends, if the patient occasionally exercise the eye by wearing a suitable cataract spectacle, to preserve a healthy condition of the retina. Deprive an organ, he said, of its natural stimulus, and its nutrition will become either feeble or perverted; in illustration of which might be cited those cases where amblyopia or amaurosis is persistent after the removal of a congenital cataract from an adult.

The primary effect of the removal of a single cataract, as respects vision, is in many instances to render it double or confused; the patient, however, soon ceases to regard the impressions conveyed

through the retina of the eye which has lost its lens, and recovers single and clear vision. In illustration of this, the cases recorded by Dr. Andrew Smith, in the 'Edinburgh Medical and Surgical Journal,' No. 74, are most apposite and conclusive. Three saw objects double when the bandage was first removed, and for nearly twenty-four hours, and then singly. Two saw double about three hours; and one of them, two days afterwards, upon being surprised, and opening his eyelids suddenly, experienced, for a few seconds, the same imperfection. A sixth saw constantly double for four days, and after that, as distinctly as ever he did; and the other three cases, as above remarked, always single.

Art. 89.—*On extraction of Cataract by a single stroke.* By M. Chassaignac.

(*Mon. des Hôp.*, No. 74, 1856; and *Med.-Chir. Rev.*, Oct., p. 550.)

M. Chassaignac observes that several oculists, and especially Wenzel, have extracted cataracts at a single stroke; opening the capsule as the knife traversed the anterior chamber on its way out. This procedure, which has hitherto been justly considered as an exhibition of a somewhat dangerous dexterity, may be very well accomplished by the aid of chloroform. It offers, indeed, great advantages; for, whatever may be the dilatation at the moment of commencing the operation, it contracts immediately after the escape of the aqueous humour, and the knife introduced subsequently may easily wound the iris. In this operation, the pupil remaining wide open, the accident is not to be feared. In other respects, however, Wenzel's operation was really dangerous, and presented difficulties well nigh-insurmountable without the aid of chloroform.

M. Chassaignac habitually employs chloroform in his operations for cataract, and the advantages he has derived from it he thinks are due to the observance of the proper principles that should regulate its employment. No patient can be operated upon with security if he has not been brought to the stage of tolerance, that he sleeps deeply and placidly, without irregular movements, restlessness, cries, or delirium. His respiration is normal, his *facies* excellent, his pulse large and full—presenting, in a word, an assemblage of conditions not only well suited to tranquillize the surgeon, but also eminently fitted to facilitate the execution of the operation. Vastly different is it to operate upon an eye rendered quite immovable, and to act upon one essentially mobile, and incessantly seeking to escape from the action of the instruments. Among the accidents thus avoided, is wounding the hyaloid membrane. It is in fact almost always to this accident, and not to the pressure exerted upon the globe of the eye, that is due the escape of more or less of the vitreous humour after cataract operations. This almost inevitable accident, when operating without chloroform, is easily avoided in the immovable state of the eye. The same may be said of wounds of the iris, and most of the accidents consequent on extraction. The possibility of producing vomiting has been urged as

an objection to the use of chloroform in this operation, but, by waiting before commencing the operation until the period of tolerance has been reached, M. Chassaignac has never met with vomiting or struggling.

ART. 90.—*On the operation of extraction in certain cases of Artificial and Closed Pupil.* By Mr. CRITCHETT, Surgeon to the Royal London Ophthalmic Hospital, &c.

(*Lancet*, June 21, 1856.)

In this paper Mr. Critchett notices some cases of ophthalmic disease that afford types of certain conditions that have hitherto been peculiarly embarrassing and unsuccessful in their treatment, and he founds upon these cases suggestions for a method of operating that is at variance with rules hitherto laid down by the best authorities on diseases of the eye.

"There are two morbid conditions to which I desire especially to draw attention. The first is where an artificial pupil has been made, and the lens or its capsule, or both, are found to be opaque at the time of the operation, or to have become so at a subsequent period. The second is where, in consequence of some form of iritis, the pupil is small, irregular, and more or less adherent, and the small portion of the capsule that is visible presents a white opacity, with a fringe of uveal deposit, the amount of both varying much in different cases. In the first of these conditions, one of two complications exists: if it be a case of penetrating ulcer or wound of the cornea, with a dense opacity of a portion of the cornea, in which an artificial pupil has been made opposite to the most transparent part of the cornea, under these circumstances, the interior chamber is small and shallow, and the amount of aqueous humour is of necessity very limited, and far below the normal average; if, again, it has been a case in which the disease has been in the iris and lens, there will be a morbid condition of the aqueous chamber, and a proneness to the lighting up of a slow form of inflammation of the deeper textures of the eye. In the second of these conditions, in which the pupil is small, irregular, and adherent to an opaque lens, the sight is often seriously damaged, and it is difficult to determine how far this is due to visible changes in the lens and its capsule and the iris, and how far to changes in the deeper textures consequent upon the former iritis. The previous history, and the appearance of the eye, are our only guides in determining this.

"In both classes of cases, where an artificial pupil has been made, and the lens is found to be opaque, or has become so at a subsequent period, it is a most important point to determine what is the safest and most successful method of getting the cataract out of the field of vision. The best and more recent authorities seem to be very meagre and unsatisfactory upon this point. In the last edition of Mackenzie's work, I have not found any allusion to the complication of cataract with artificial pupil. He merely states generally, that extraction should never be attempted where any adhesion exists between the iris and the capsule of the lens. Mr. Haynes Walton writes as follows:

'When the pupil is adherent to a capsulo-lenticular cataract, and the cornea is sufficiently clear in the centre to allow it to be seen, the cataract must be first attended to. This has been fully dwelt on under the head of Drilling.' 'When the opacity of the cornea precludes the application of instruments to the centre of the iris, or when adhesion of the iris to the cornea renders it impossible that the cataract can be operated upon without transfixing the iris, the pupil should first be made, and the opaque lens be disposed of afterwards—that is, by a subsequent operation for *solution* or *displacement*.' Mr. Dixon does not, as far as I can perceive, lay down any rules upon this point in the body of his work on the Eye, but in the appendix he mentions a case which is so applicable to this subject that I beg to quote it.

"'John R—, æt. 67, presented himself in June, 1852, in the following condition: both pupils were very small and irregular, and closed by a whitish membrane, evidently the product of old iritis. I made an artificial pupil. I was sorry to find the lens opaque, and presenting the ordinary appearance of a firm senile cataract. To extract or to depress this seemed equally out of the question, on account of its firm adhesion to the iris—to say nothing of the objections which, to my mind, always exist against "depression" as an unscientific and destructive operation. I had therefore no alternative but to get rid of the lens by solution. The needle was first used about the beginning of August, again at the end of September, and again early in December. Early in March the edge of the cataract opposite to the artificial pupil was absorbed, the bulk remaining unacted upon. With a convex glass, the patient could read large type.'

"The above quotations from these modern authors tend to show that but little attention has been given to this point, and the few hints that are thrown out suggest the operation of solution or of depression as the only alternatives. *A priori* reasoning would lead to the conclusion that these two operations offer but faint prospects of success. Solution is not a very prosperous operation even in a normal condition, unless the cataract is soft; but when the anterior chamber is diminished in size, and the aqueous humour is lessened in quantity, the very conditions upon which absorption depends are very materially curtailed, the space in which the fragments of the broken lens lodge is too small, and the old disease to which the change in the eye has owed its existence, is prone to be aroused. These form serious objections to this operation under such circumstances; and, I may add, that the unfavorable results which have seemed theoretically probable, I have found, in several instances, practically true. It was the occurrence of an unsuccessful case, in which, after making an artificial pupil, and carefully breaking up the cataract, destructive inflammation ensued, that led me to the conclusion that it is an unsuitable and dangerous operation. As regards 'depression,' I quite agree with Mr. Dixon, that it is always an unscientific operation, and, under the conditions I am now considering, peculiarly so. If the cataract be soft, it is impracticable; and, if hard, the adhesions very much increase the probability of its rising again into the axis of vision, and the previously diseased state of the eye renders the presence of a

cataract floating in the vitreous humour a most undesirable and dangerous complication.

"These very serious, and even fatal, objections to these two modes of operating in cases of artificial pupil, complicated with cataract, led me carefully to reconsider the whole subject, and to examine into the force and validity of the objections to extraction through an artificial pupil. They may be stated as follows: First. The adhesions that exist between the capsule and the iris. Secondly. The unyielding character of the artificial pupil preventing the escape of the cataract. Thirdly. The risk that in cases where an opacity of the cornea already exists, the flap that is made for the removal of the cataract may not unite, or, if it does unite, may lose its transparency.

"The more I reflected on this subject, the more I felt inclined to doubt the validity of these objections. The adhesions, which are always considered by ophthalmic surgeons as entirely prohibiting extraction, only exist between the capsule of the lens and the iris. The cataract itself lies as loose as ever within its capsule, and will as readily escape when the capsule is freely opened; so that this, which has always been regarded as the principal objection, is quite fallacious and unsubstantial.

"The other two objections have not been found of any weight when put to the test of experiment. I am, therefore, of opinion, that in all cases where opacity of the lens coexists with an artificial pupil, the opaque lens should be extracted through the artificial pupil. If it occur in a young person, and the cataract is soft, it may be removed through a small opening, just sufficient to admit the spoon of the curette, with which it may be gradually but effectually removed. When the cataract is firm, and of the usual size, a section must be made close to the junction of the cornea with the sclerotic, and in such a position that the flap corresponds with the artificial pupil; the capsule must be opened in the usual way, and the cataract may be gradually pressed out just as readily as in an ordinary case of cataract. One inconvenience that frequently attends the operation of extraction in a normal eye—I mean prolapse of the iris—never can occur in consequence of the artificial pupil. I have had several cases illustrative of these points, out of which I propose to select the following:

Case 1.—Mary Anne A—, æt. 28, came under my care at the London Hospital early last June. About a year previously she had entirely lost the right eye, the globe of which was shrunk. In the left eye there had been a penetrating ulcer, with complete adhesion of the pupillary margin of the iris to the corneal cicatrix; the anterior chamber was consequently diminished both in depth and circumference; about half the cornea retained its transparency; the iris also appeared healthy, with its fibres tightly drawn towards the cicatrix, to which it was firmly adherent. The patient could just distinguish light from dark; and had been in that condition about nine months when she first came under my care. The first step towards the restoration of sight was the formation of an artificial pupil, which was made in the following manner: a small opening was made in the cornea, close to its junction with the sclerotic; the canular forceps were introduced, and a strip of iris was drawn away from its attachments to the scar in the cornea, and having been brought through the opening, was cut off. A well-defined, narrow, oblong

pupil, was thus formed obliquely upwards and outwards, opposite the largest clear surface of the cornea. It was then found that the lens was opaque. About three weeks after the first operation, I made a small section in the cornea, about a line and a half in extent; and after opening the capsule with a needle, with the aid of the spoon of the curette, the cataract, which was soft, was gradually and completely removed, good union took place, and the patient recovered her sight so far as to be able to read with a suitable lens.

Case 2.—James B—, æt. 54, first applied to me at the Ophthalmic Hospital about eight years ago, in the following condition: the left globe was shrunk, and had been destroyed some years previously from inflammation. In the right eye the lower half of the cornea was densely opaque, and the pupil was partially adherent, and drawn down behind the opacity so that there was no useful vision. I succeeded, with Tyrrell's blunt hook, in making a well-defined oblong pupil directly upwards opposite the transparent part of the cornea; the lens was not injured. For above seven years he enjoyed useful vision, and earned his living. At the end of that time his sight began gradually to fail, and when he again applied to me, being about eight years after the first operation, he was once more nearly blind. On examination, I found a dense amber cataract occupying the pupil. After much deliberation, I determined to attempt extraction. I had never tried such an operation, nor had I ever heard of its being done, and I could not help fearing that a hard fully formed cataract might refuse to pass through an artificial pupil, and even if that difficulty were overcome, that the flap might become opaque. I was, however, agreeably surprised to find that the operation was as easy and as successful as an ordinary case of extraction. I made the upper section close to the sclerotic, and very nearly of the usual size. Everything progressed favorably, and in a few weeks after the operation my patient was able, with a suitable lens, to see as well as after the first operation.

Case 3.—William L—, æt. 31, came under the care of my colleage, Mr. Wordsworth, in January last. The left eye was irretrievably lost; in the right eye there was a faint perception of objects; the pupil was small, irregular, and adherent to the capsule of the lens, which was opaque. Mr. Wordsworth made the man an artificial pupil downwards, and outwards with a pair of canular forceps, so as not to injure the lens or its capsule—a method that was, I believe, suggested and first executed by my friend Mr. White Cooper. Soon after this the man came under my care. Very little improvement of sight followed this operation. On examination, an opaque lens, with its defined sharp edge, could be plainly seen through the artificial pupil. I extracted this very readily through a moderate-sized section; good union took place, and the artificial pupil closed again. A few weeks after, I opened this with two needles in such a way that I once more succeeded in getting a small and nearly central pupil, through which he has now very useful vision. These cases, at least, prove the possibility of extracting a cataract, even when hard and fully formed, through an artificial pupil of average size, and the fair prospect of success with which such an operation may be undertaken. It is one which I should always perform in future, and I feel assured that as contrasted with former methods, it enormously increases the patient's prospect of recovering sight. There is another class of cases equally important and more numerous, to which I have applied the same principle. I allude to cases, the result of old and neglected iritis of a chronic character, in which the pupil is small, irregular, and adherent, and the capsule of the lens, and sometimes the lens itself, are opaque, and in which, as a consequence, there is no useful vision, and to which I propose to direct attention in another paper.

Art. 91.—*On anæmic protrusion of the Eyeball.*

By Mr. R. Taylor, Surgeon to the London Ophthalmic Hospital.

(*Medical Times and Gazette*, May 24, 1856.)

A key to the pathology of this obscure affection, Mr. Taylor thinks, "has been given by Dr. Marshall Hall in his valuable writings on the subject of convulsive and paroxysmal diseases. He has shown that, in such diseases, there is a tendency to spasm of the muscles of the neck; and that the seizures are the direct result of impeded return of blood from the head, the deep-seated veins being compressed by the irregular muscular action. Now, the subjects of anæmic protrusion of the eyeball are eminently of the class to which Dr. Hall's remarks apply. Some of them are subject to fits, hysterical or epileptic; in all, the nervous system is in a state of extreme excitability, so that the slightest agitation produces starting and trembling, sometimes so violent as almost to resemble convulsion in a minor degree. Is it not probable that, as in the confirmed epileptics, there may in these cases also be an impediment to the free return of blood from the head, only to a less amount, and perhaps more continuously? In the only two post-mortem examinations that have been made, the internal jugular veins were found to be greatly dilated, as though they had long been subject to distension by some obstructing cause towards the lower part of their course; and, as in neither case was their any solid growth by which they could have been compressed, it does not seem unreasonable to suppose that the obstacle was due to muscular spasm. The same explanation would account for the enlargement of the thyroid gland, which, as has been already stated, is due to simple hypertrophy of its normal structures, and would be a probable result of long-continued hyperæmia. The palpitation of the heart does not require any explanation here, as it is common to all cases of anæmia, whether accompanied or not with protrusion of the eyes.

"The different stages of the disease, then, may be stated as follow: First, some debilitating disease, or exhausting discharge, producing—secondly, anæmia; thirdly, that peculiar state of the nervous system, in which there is a tendency to spasm of the muscles of the neck; fourthly, as the result of such spasm, and consequent impeded return of blood from the head, hyperæmia and hypertrophy of the thyroid gland, and dilatation of the veins of the orbit, causing exophthalmia."

These remarks are offered suggestively, but at the same time it is necessary to say that they have arisen out of a careful consideration of the cases which have fallen under Mr. Taylor's own notice, as well as of the cases recorded by others. Mr. Taylor's cases are three in number.

"Case 1.—Mrs. T., aged 26, has been married eight years, but has never been pregnant. Her menstrual periods have been regular; but the discharge has always been in excess, and she has had several attacks of menorrhagia, losing much blood on each occasion. She has long been subject to leucorrhœa, which, six months ago, became very profuse, and shortly after this she was attacked with palpitation of the heart. About the same time she

observed a swelling in her throat, and her eyes became so prominent as to attract the attention of her friends. These symptoms, which appeared as nearly as possible simultaneously, have gone on increasing slowly but steadily. Leeches and tincture of iodine have been applied to the throat, but without producing any diminution in the swelling.

Present State.—She is very pale and feeble. She suffers from spinal tenderness, intercostal neuralgia, ringing in the ears, œdema of the ankles, and other symptoms of anæmia. She is exceedingly nervous, starting and trembling violently when suddenly addressed; she has occasional hysteric fits. The pulsations of the heart averaged 134 per minute, and are very distressing; the carotid arteries also throb violently. The thyroid gland is enlarged to about three times its natural size, its surface being smooth and regular; several of its enlarged arteries can be felt pulsating near the surface. The eyeballs protrude so as to expose a broad rim of the sclerotica around the margin of the cornea, giving her a wild and staring appearance, which attracts attention and exposes her to annoyance in the streets. The amount of protrusion varies, within certain limits, with the degree of nervous excitement, being always much greater when she is agitated. The eyeballs can be readily replaced by gentle pressure, but they speedily resume their prominence when the pressure is remitted. There is some congestion of the conjunctival vessels, and slight increase of the meibomian and mucous secretions; in other respects the eyes have a healthy appearance; their movements are perfect in every direction, and the sight is unimpaired. The eyelids, which are of a dusky colour, cannot be closed without a slight muscular effort.

"The treatment, which extended over a period of three months, consisted in the administration of iron in several forms; astringent injections, per vaginam, to check the leucorrhœa; and belladonna plasters over the region of the heart, which afforded great relief by diminishing the violence of the palpitation. As her general health improved, the heart's action approached more and more to the natural standard, and the prominence of the eyeballs was reduced, until they ultimately resumed their proper position: but no change took place in the size of the thyroid gland, so long as she remained under observation. She subsequently had a slight relapse, brought on apparently by mental agitation, but a similar plan of treatment again proved successful in a few weeks.

"Case 2.—Mrs. C., aged 40, has had eight children, the last two of whom were twins, and were born four years ago. One of these she suckled for twelve, and the other for sixteen months; during which time, as on previous similar occasions, she menstruated regularly and abundantly. When she had suckled both infants for a year, she first observed an enlargement of her throat, and the swelling increased slowly for about two years, since which it has remained stationary. Some months after she first observed this enlargement her eyes began to protrude, so as to attract the attention of her friends. She then applied to a surgeon, who told her that she had disease of the heart—a fact which she then learned for the first time, as she had never felt the slightest uneasiness in that region; how long the palpitation may have existed it is impossible to say, as even now, although it is very violent, she is quite unconscious of it, unless when much excited.

"*Present State.*—Pale, anæmic, and highly excitable. The eyeballs protrude so as to expose a narrow rim of sclerotica around the cornea. They can be readily replaced by gentle pressure; their movements are perfect in every direction, and the vision is unimpaired. The protrusion varies with the amount of nervous excitement. The conjunctivæ are slightly injected, but in other respects the eyes appear to be perfectly healthy. The heart beats

violently and rapidly, the pulsations being 142 per minute; but it is probable that this exceeds the usual standard, and is partly due to excitement, consequent on a stethoscopic examination. The carotid arteries pulsate strongly and visibly. The thyroid gland is enlarged, chiefly in a lateral direction, to more than thrice its natural size; its surface is smooth and regular.

"The treatment was conducted upon the same general plan as in the preceding case, and extended, with one or two interruptions, over a period of five months. The general health was restored, and the eyes resumed their natural position; but there was not any diminution in the size of the goitre.

"In each of the above cases, a careful stethoscopic examination of the chest was made by my friend Dr. Hare, who has kindly permitted me to condense and make use of his report.

"In the first, there was some hypertrophy, with a little dilatation of the heart, but no valvular disease. In the second, the condition of the heart was almost exactly similar, but there was a doubtful murmur with the first sound, the exact nature of which could not be clearly ascertained, on account of the excited state of the circulation at the time.

"Case 3.—I have reserved this case for the last, although it is the first entered in my case-book, as I am desirous of calling attention to a very striking peculiarity which it presented, in the sudden appearance of the exophthalmia.

"Letitia M., aged 21, was subject to fits, probably epileptic, in childhood. These gradually ceased as she attained the period of puberty, but she remained excessively nervous and hysterical, and has long suffered from spinal tenderness, intercostal neuralgia, coldess of the extremities, and other symptoms of nervous debility. Three years ago, after a fall by which she severely bruised her right side, she began to suffer from palpitation of the heart; this has continued ever since, being constant and annoying, interrupting her sleep, and greatly aggravated by the slightest agitation or exertion. One year after this, the thyroid gland began to enlarge, and gradually increased until it attained its present volume, about four times that of the healthy gland. She was for some time under hospital treatment for this, as well as for the palpitation, but without receiving any benefit. About a week before I first saw her, she felt an unusual sensation in the brows one morning on awaking, and on looking in the mirror she found that her eyes, which had been perfectly natural in appearance when she retired to rest, were protruded to such an extent that she could scarcely close the eyelids.

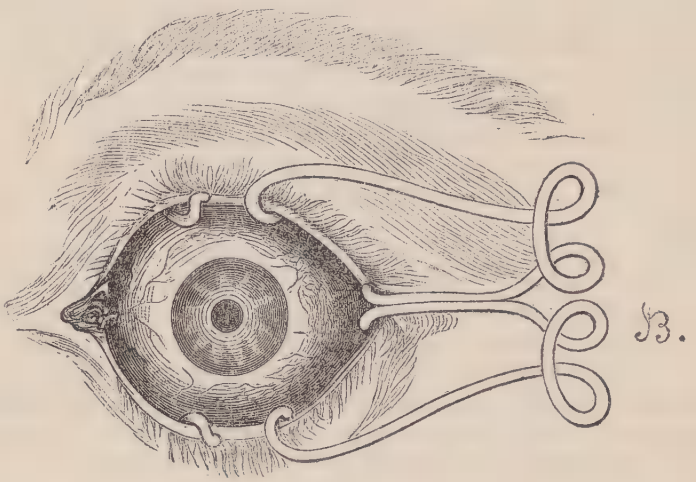
"*Present State.*—The eyeballs protrude as above described; their movements are perfect; the sight is not impaired, and they appear to be perfectly healthy. They can be readily replaced by gentle pressure, but resume their abnormal position when the hand is removed. She says that the prominence varies very much, and that at times it is scarcely perceptible. The action of the heart is very violent; the pulsations, under the excitement of being examined, are 140 per minute. There is a slight blowing murmur with the first sound; on percussion, the dulness over the heart is rather more extensive than natural. The carotid arteries throb violently. The enlarged thyroid gland is smooth and regular, and several of its dilated arteries can be felt near the surface.

"Under treatment of a similar character to that adopted in the preceding cases, and extending over rather more than two months, the eyes had very nearly resumed their normal position, and the general health was very much improved, but there was no diminution in the size of the thyroid gland. She then left town, and I have not had an opportunity of seeing her since."

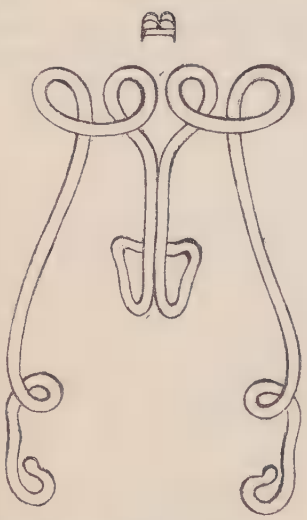
Art. 92.—*Speculum Oculi and Ophthalmostat.*
By Dr. J. Ritchie Brown.

(*Medical Times and Gazette*, Oct. 18, 1856.)

To the already long list of inventions for retracting the eyelids and fixing the eyeball, Dr. Brown adds another, which combines, to a certain extent, the properties of each. It is a combination of the old and much approved wire speculum of Pellier, with the fixateur of Nèlaton. The diagram will at once explain its construction. It is made of one piece of German silver wire.



The intermediate part, B, is first placed in the fold of the conjunctiva, which connects the external angle of the lids with the globe of the eye; the retractors are then adapted to the lids. By the pressure of the part B on the cul-de-sac of the conjunctiva, the eye-ball is completely prevented from turning inwards.



To persons who have no assistant it will prove useful, as it leaves both hands free for such operations as artificial pupil, strabismus, snipping off small tumours, &c.; and this advantage is gained without any additional risk or pain to the patient, which can hardly be said of the ophthalmostats of Jaegar, Gräfe, or Rothmund.

The part B might also be adapted, by means of a tube soldered to the spring, in which it may slide, so as to be regulated to avoid pressure on the eye-ball, or be removed altogether at pleasure.

Art. 93.—*A new plan of treating Obstruction of the Nasal Duct.* By Mr. T. Westropp, of Clifton.

(*Medical Times and Gazette*, June 7, 1856.)

"I have long thought," says Mr. Westropp, "that by carefully and frequently passing up from the nostril a catheter of very small calibre, we might be able to cure those cases without the disagreeable necessity of making a deforming incision at the angle of the eye, which patients much object to. I propose that a fine wire of silver or gold, or a fine bit of catgut, be passed down through the puncta and brought out at the nostril; on this let a No. 1 catheter be passed up to the lachrymal sac, in the same way that a catheter, with its point cut off, is passed along a piece of gut previously pushed through a stricture into the bladder.

"The various measures already practised for improving the general health and removing local vascularity, should be first had recourse to. In addition to the lotions in common use, I would recommend a collyrium composed of iodide and bromide of potassium dissolved in water, a few grains of each to the ounce; this may tend to produce absorption of the effused lymph, or correct the thickened state of the lining membrane. I have used such a lotion with benefit in opacities of the cornea. In addition, the power of the tensor tarsi, or Horner's muscle, might be restored from its long distension by a lotion containing strychnia, or by the endermic application of strychnia over the sac.

"I have been on the point of putting this mechanical contrivance to the test in two appropriate cases, but, unfortunately, the patients ceased to attend when they were relieved of the inflammatory symptoms."

Art. 94.—*A new method of reducing Dislocation of the lower Jaw.* By Dr. Leo.

(*Deutshe Klinik*; and *Gaz. Méd. de Paris*, June 7, 1856.)

The method here described consists in reducing each condyle *separately*. The patient being seated in a chair, the surgeon places himself behind him towards the right side, and fixes his head against his chest, and having done this he introduces the thumb of the right hand into the patient's mouth and presses upon the posterior molars, until he feels the jaw move downwards, when he pushes the condyle into its cavity by a backward motion. After this he repeats this operation with the left hand on the other side.

An experimental trial of this method, in two cases, has convinced the author that the reduction is more easily accomplished in this way than in the ordinary way.

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 95.—*Statistics of the operation for tying the Brachio-cephalic Artery.* By Drs. PAUL and EVE.

Philadelphia Medical Examiner, Aug., 1856.)

These statistics are from a paper containing the history of the different cases in which this operation has been performed. They require no comment.

Statistics of attempts to obliterate the Brachio-cephalic.

Surgeon.	Year.	Age.	Sex.	Result and Cause of Death.
1. Mott	1818	57	Male	Death on the 26th day, from repeated hemorrhage.
2. Graefe	1822	Adult	,,	Death on the 65th day, from hemorrhage.
3. Norman	1824	,,	—	Death.
4. Arendt	1826	—	—	Death on the 8th day, from inflammation of sac, pleura, and lung.
5. Hall	1830	Adult	Male	Death on the 6th day, from dyspnœa and hemorrhage.
6. Bland	1832	31	,,	Death on the 18th day, from repeated hemorrhage.
7. Bujalski	before 1840	—	—	Death on the 2d or 3d day.
8. Bujalski	1840	—	—	Death on the 2d or 3d day.
9. Lizars	1836	30	Male	Death on the 21st day, from repeated hemorrhage.
10. Dupuytren	—	—	,,	
11. Hutin	1842	Adult	,,	Death on the 11th hour; antecedent hemorrhage and exhaustion.
12. Porter	1831	—	—	No ligature; patient recovered.
13. Kuhl	1836	43	—	Death on the 3d day, of hemorrhage
14. Liston	1838	Adult	Male	Death on the 13th day.
15. Key	1844	,,	Female	Failed, yet patient died of pulmonary distress and exhaustion.
16. Hoffman	about 1840	—	—	Died.

In reality the ligature was tied around the innominata in only ten of these cases, viz, Mott's, Graefe's, Norman's, Arendt's, Bland's, Bujalski's, Bujalski's, Lizars', Dupuytren's, and Hutin's. In Hall's

the ligature was passed through the artery; in Kuhl's and Liston's the carotid and subclavian were tied just beyond the bifurcation; and in Porter's, Key's, and Hoffmann's the operation was abandoned and no ligature employed.

In every case where a ligature was applied, either to the brachio-cephalic or near its division into right subclavian and right carotid, namely, in 13 cases, death has followed; even in 2 where the operation was abandoned there was a fatal result in 1; and in the 16 cases 1 alone recovered, and in that no ligature was used, the vessel having been simply exposed; the cure in this case was spontaneous, and in all probability entirely independent of the operation.

ART. 96.—*Practical deductions from a clinical record of twenty-six cases of Strangulated Hernia.* By Mr. BIRKETT.

(*Medical Times and Gazette*, May 3, 1856.)

The object of this paper (which was read before the Medical Society of London, 26th April, 1856) is, first, to bring prominently into the foreground the causes of death; secondly, the circumstances by which those causes are brought about; and, thirdly, the means by which they may be avoided. It is shown, by means of a table of the cases, that a certain number of unfavorable circumstances occurred in each case, and that, in proportion to the aggregate, as a general rule, the case was cured, or terminated fatally. But in some of the cases only two, three, or four unfavorable circumstances existed, and yet the patients died; and in these, as well as others with a larger number, the causes of death are sought for and demonstrated. Of the 26 cases, all of whom were operated upon by the author, one half terminated fatally. In the fatal cases, death resulted from causes over which the operation could have but little influence; and it was undertaken only with the view to place the patient in a condition more favorable to recovery. The causes inducing the fatal result may be thus enumerated:

1. The consequences of a journey performed while the patient was suffering with strangulated hernia.
2. The defective constitutional nutrition of the patients generally.
3. Irrecoverable prostration, the result of long-continued vomiting and strangulation of the bowel in aged women.
4. Violence inflicted on the hernia. To this cause the death of not less than 5 out of the 13 is to be attributed.
5. The administration of purgatives before the operation.

The author unhesitatingly preferred to reduce the hernia without opening the peritoneal sac in those cases in which the surgeon would be justified in returning the protrusion by the taxis, if it could be accomplished.

In the 26 cases the peritoneal sac was opened in 12, and the causes which prevented the reduction of the hernia without so operating were the three following:

1. The contents of the sac.
2. The morbid condition of the contents of the sac.

3. The dimensions of the neck of the sac, and the unyielding state of its tissue.

Six cases were related in which the author had reduced the hernia by a simple division of the fibrous tissues about the neck of the sac, and external to that covering of the hernia known as the fascia propria. To this simple method of relieving the constriction around the bowel the author gave the name of "The Minimum Operation." The causes of death in the fatal cases were shown, by post-mortem examination, to be referable to peritonitis; injury of the bowel inflicted in the taxis; exhaustion after fæcal fistula; phlegmonous inflammation; collapse; acute bronchitis; and perforation of the bowel. Of the cured cases, the minimum of time during which the bowel was strangulated, was three hours; the maximum seventy-seven hours. Of the fatal cases, the minimum period of strangulation of the bowel was eleven hours; the maximum seventy-nine hours. Of the cured cases, the average number of hours during which the bowel was strangulated amounted to thirty-three. Of the fatal cases, the average period of strangulation of the bowel was forty-six hours. The causes of death were primary and secondary: 1. Prostration; peritonitis; gangrene of the intestine; perforation. 2. Bronchitis; abscess behind the peritoneum; phlegmonous inflammation and suppuration. The circumstances by which they were brought about: Age; a journey; the defective constitutional nutrition of the patient; the morbid state of the canal above the strangulated piece of bowel; injury of the hernia caused by the constriction of the ring, and by manual violence inflicted on it; the duration of the sufferings; the intensity of the constitutional sympathies; fæcal fistula; neglect of the tumour; the administration of purgatives; the warm bath. The means by which they may be avoided are: By care in manipulation; the early relief of the bowel from constriction; the reduction of the hernia without opening the peritoneal sac; the exhibition of opium; and the avoidance of all causes likely to induce exhaustion.

Art. 97.—*On the "expiratory method" of performing the Taxis in Hernia.* By Dr. Andrew Buchanan.

(*Glasgow Medical Journal*, July, 1856.)

"This method is a modification of the ordinary manual operation for the reduction of hernia, commonly named the 'taxis.' The patient is placed in the position usually recommended, or which may be deemed most suitable in the various forms of hernia, and the compressing force is applied in the usual way. The peculiarity of the method consists in this, that just before the force is applied, the patient is directed to make a very full expiration, and thereafter to refrain as long as possible from making a fresh inspiration; or, as it is more intelligibly expressed to the uninitiated, he is directed to blow as much air out of his mouth as he possibly can, and to continue thereafter as long as he can without drawing a fresh breath. While this is going on, the operator, having made all necessary preliminary arrangements,

attempts to return the hernia, beginning as soon as the expiration is a little advanced, and continuing his efforts gently but steadily during the whole period of suspended respiration. When the patient is at length compelled to draw a fresh breath, the pressure should be relaxed, so as not to oppose the force of the muscles of inspiration; but it should not be altogether given up, and as soon as the patient is a little recruited from his exhaustion, he is made to perform another expiration; and so the operation is continued as long as may be required. The first indication of success, consisting in a slight internal motion or gurgling noise of the tumour, almost universally occurs during the suspension of the breathing, and it is during the same period that the complete return of the hernia is usually effected.

"There are some important minor details in the operation, which depend on the intelligence and strength of mind of the patient. If he possess both those mental qualities in a sufficient degree, he will be able, after making the full expiration, to refrain from inspiring by a voluntary effort. Such cases are the most favorable for the success of the operation. In other cases, and these cases occur more especially among females, the patient understands and acts fully upon the direction of blowing out the breath, but wants strength of mind for the subsequent control over the inspiratory muscles. In all such cases it is indispensable to have an assistant, whose duty is, as soon as the expiration is completed, to apply his hands over the mouth and nose of the patient, so as to prevent inspiration for as long a period as may be deemed safe and advisable. If, however, the lungs can be sufficiently emptied, such cases are little less favorable than the former. Last of all, there are persons who, whether from natural stupidity or from fright and confusion of mind arising from the condition in which they are placed, cannot be made to comprehend and follow out the directions given them. In those cases the lungs are never emptied to the necessary degree, and the success of the operation is proportionally uncertain.

"The theory of this operation is simple. In the first place, it disassociates the diaphragm from the abdominal muscles, and, by preventing them from acting in concert, removes the chief obstacle to the reduction of hernia. Secondly, it weakens the muscular power of the body, and diverts it from the act of resistance.

"It is the simultaneous contraction of the diaphragm and abdominal muscles which enables the patient to press down and resist the efforts made to return the hernia. This is one of the most important combinations of muscular action in the whole animal economy. It constitutes the *nixus* of physiologists. Acting in the natural way, it forces out the contents of the bowels, of the urinary bladder, and of the uterus, according to the direction given it; and when misdirected, it becomes the principal cause of the production of hernia, forcing out the bowels themselves where the walls of the abdomen are least able to resist the pressure; while it becomes also, after the disease has been once produced, the force which opposes the return of the hernia into the cavity of the abdomen. Now, it is quite indispensable to the existence of this force that the diaphragm act as well as the abdominal muscles, and the moment the diaphragm is relaxed the force is neces-

sarily destroyed. The intention of the instructions given to the patient before proceeding to taxis will therefore be at once apparent. Expressed in other terms, those instructions just amount to this—'relax your diaphragm, and keep it in a state of relaxation;' for there is no mode of relaxing the diaphragm but by making an expiration, nor any mode of keeping the diaphragm relaxed, but by refraining thereafter from breathing.

"In so far as the general muscular system is concerned, the mode of proceeding here recommended is not confined to the application made of it, but might be successfully employed in facilitating the reduction of dislocations, or counteracting any other muscular resistance. The state of expiration and the suspended breathing which follows it, produce rapidly an overwhelming sense of debility over the whole body, which paralyses all muscular exertion. These conditions of the respiratory organs not only produce a positive but also a negative effect of an useful kind; for they prevent full inspiration, and the *nixus* of which it constitutes a part. Now that act, by giving fixity to the trunk of the body, and a firm point of support to the muscles thence arising, is an indispensable preliminary to every vigorous muscular effort, and of course to every act of resistance. Last of all, there is no feeling more absorbing than that produced by a want of breath, whether kept up voluntarily or enforced, and the diversion of the patient's mind from the hernia so produced, operates just like the well-known expedients employed in cases of dislocation to facilitate reduction."

Dr. Buchanan has practised this mode of reducing hernia for several years.

Art. 98.—*A new mode of reducing Strangulated Hernia.* By Baron Seutin.

(*Bull. de Thérap.*, tome i, pp. 161-206; and *Med.-Chir. Rev.*, July, 1856.)

Baron Seutin declares, that with his mode of reducing strangulated hernia, which he has now practised for twenty years, he hardly ever in his large practice finds it necessary to have recourse to an operation.

The patient is laid upon his back, with the pelvis raised much higher than the shoulders, in order that the intestinal mass may exert traction upon the herniated portion. The knees are flexed, and the body is slightly turned to the opposite side to that on which the hernia exists. The surgeon ascertains that the hernia, habitually reducible, cannot be returned by continuous and moderate taxis. He next seeks with his index finger for the aperture that has given issue to the hernia, pushing up the skin sufficiently from below, in order not to be arrested by its resistance. The extremity of the finger is passed slowly in between the viscera and the herniary orifice, depressing the intestine or omentum with the pulp of the finger. This stage of the procedure demands perseverance, for at first it seems impossible to succeed. The finger is next to be curved as a hook, and sufficient traction exerted on the ring to rupture some of the fibres, giving rise to a

cracking very sensible to the finger, and sometimes to the ear. When this characteristic crack is not produced, the fibres must be submitted to a continuous forced extension, which, by distending them beyond the agency of their natural elasticity, generally terminates the strangulation. This mode of procedure is more applicable to Gimbernat's ligament, the hooking and tearing of which are more difficult than in the case of the inguinal ring. Considerable strength has sometimes to be exerted, and the index finger becomes much fatigued. When, in consequence of the narrowness of the ring, the finger does not at once penetrate, it is to be pressed firmly against the fibrous edge, and inclined towards the hernia. After a time the fibres yield and the finger passes. When the finger becomes fatigued it is not to be withdrawn, but it should be supported by the fingers of an intelligent assistant, who seconds the action it is desired to produce. In inguinal hernia, the traction should not be exerted with the finger upon Poupart's ligament, but in a direction from within outwards, and from below upwards, by which the aponeurotic layers between the two ligamentous pillars constituting the inguinal aperture are easily torn through.

The ring is then enlarged by this tearing, just as if it had been divided by a cutting instrument, or largely dilated, and reduction takes place easily, by performing the taxis in a suitable direction. The mobility of the skin, its laxity in parts where hernia prevails, and its extensibility, greater in proportion to its thinness and to the absence of a lining of fatty cellular tissue—by allowing the sliding and the thrusting of this membrane in front of the finger it cushions, affords protection to the intestine from all immediate contusion. When the strangulation is induced by the issue of a considerable mass of intestine, or an accumulation of fæcal matters, it is desirable first to disengage one of the extremities of the noose, and to seek to expel the gas or fæcal matters by moderate pressure, in order to facilitate the reduction of the tumour. In the few cases in which the finger cannot be introduced, a small incision may be practised in the skin, and the handle of a spatula or any blunt instrument may be passed in by separating the cellular tissue. Pressing this against the border of the ring, while avoiding the intestine, this orifice may be eroded or dilated without danger. The greater the resistance offered by the aponeurotic fibres, the greater will be their tension, and the more easily will their laceration be produced.

As a general conclusion, it may be laid down, that the facility and promptitude of this procedure, and the immunity that attends it, ought to diminish the gravity of the prognosis of strangulated hernia, by rendering the circumstances under which recourse need be had to an operation quite exceptional. Such exceptional cases will be found (1) in old, irreducible herniæ. (2) When the strangulation in inguinal hernia occurs at the internal ring. Generally the external ring and inguinal canal are large, and allow of the easy penetration of the finger; and then the new method is applicable, and the rupturing or dilatation of the internal ring should be attempted, and the manœuvre is rendered easier by the fact, that in these cases the canal is much shortened, and the two rings much approximated. If, however,

the external ring is too narrow to admit the finger, an operation is required. (3) When there are general symptoms of a gangrenous state of the intestine.

Art. 99.—*On Prolapsus Ani.* By Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Aug., 1856.)

There is no better illustration of the evils which may result from the improper naming of a disease, than in the case of prolapsus ani. This title being understood to comprehend all protrusions beyond the orifice of the bowel, includes conditions entirely different in regard to their nature and remedy. It also suggests the idea of weakness in the sphincter, and leads this to be regarded as the cause of derangement, when, in truth, it hardly ever is so. Under the erroneous impression thus produced, mechanical support has been most improperly employed, and, if the frequency of advertisements in respect to contrivances for this purpose may be taken as a measure of the extent to which they are used, the amount of suffering thus unnecessarily endured must be very great.

In nearly all the cases of what is called prolapsus, there is no displacement of the bowel, and merely a protrusion of its lining membrane in the thickened vascular condition which constitutes internal hæmorrhoids. When pain or bleeding is the predominant symptom of this disease, it generally retains its proper designation; but when the patient is chiefly annoyed by descent of the tumour, through the effect of exertion in the erect posture, the morbid state of the texture concerned is apt to be overlooked, so that the evil is attributed solely to relaxation of the sphincter. Many unhappy people pass through life in perpetual misery, from this source, to which peculiarities of conduct and manner might often be more correctly ascribed than to original disposition.

Whatever may be the symptoms proceeding from them, the treatment of internal hæmorrhoids should be always the same. It is necessary (these principles were laid down by Mr. Syme thirty years ago when the subject was little known):—First. That the whole of the existing enlargement within the sphincter should be removed by ligatures. Second. That each of the tumours of which it is composed should be transfixed at its root by a double ligature. Third. That the ligatures should be tied with the utmost possible tightness; and, Fourth. That any enlargement exterior to the sphincter should be removed by scissors. Morbid growths, whether within or without the anus, being thus taken away, the sphincter is allowed to resume its proper action, and the patient is relieved from prolapsus, no less effectually than from pain and bleeding.

But in other cases, comparatively rare, the coats of the rectum descend so as to constitute a tumour independently of any morbid growth beyond mere thickening, or engorgement of their texture. In children, this usually depends on the straining caused by irritation, as that of a stone in the bladder, and in old people it may proceed

from a paralytic state of the sphincter. It may also, as in the case about to be related, depend upon a condition of the anus, remediable through proper management. For this purpose it is requisite that the whole of the pendulous folds of skin should be removed by incisions radiating from the centre of the orifice—that the patient should be confined to the horizontal posture for several weeks, even when the bowels are evacuated—and that the diet should be restricted, so as to prevent distension by feculent matters.

The case in illustration of these remarks is of peculiar interest.

"About three years ago, Dr. Dick, of Mid-Calder, called upon me with a gentleman suffering from an enormous protrusion of the rectum, which he had been led to regard as irremediable, and which at first sight certainly appeared to be so. A slight expulsive effort brought into view the tumour, which in size and form resembled a large cocoa-nut. It had a firm consistence, rough irregular surface, dark brown colour, and coating of bloody mucus, so as to be more like a malignant growth than a simple descent of the bowel. Nevertheless, being satisfied from the history of the case, that the disease was of the latter kind, I held out the prospect of beneficial treatment, and the patient readily promised submission to whatever I should propose.

"The integuments round the anus being greatly relaxed and thickened, so as to constitute a number of pendulous folds, I removed all this redundant texture by repeated applications of the scissors, not in a circular direction, but pointed from the circumference towards the centre of the orifice. This would have been a painful operation if performed on a conscious patient, but being executed under the influence of chloroform, was accomplished without suffering, and also the difficulties attendant upon involuntary straining. I then enjoined the necessity of strictly maintaining the horizontal posture, and of abstaining from food beyond what was absolutely requisite. The bowels were not disturbed for several days, and at the end of this time were evacuated without any protrusion or difficulty, in consequence, no doubt, of the intestinal coats regaining their natural condition, while the sphincter was no longer impeded in the discharge of its duty. In the course of a few weeks, the patient felt able to resume his service in an office of the government in London, where he has ever since been employed, and felt so well as to enter into the matrimonial state. He lately sent me the following account of his case, which contains some details that may prove instructive as well as interesting.

"'My earliest recollection of having prolapsus ani is, that after every stool the nurse had to push up the rectum. I remember that I always used to throw myself forward on my knees, with my face almost touching the floor, and while in this attitude she pushed in what I (as a child) then called 'the bone,' having an idea that a bone always came out when I went to stool. I am told that the origin of my misfortune was caused by my receiving a severe blow on the back, after which I ran to the nursery, and on attempting to go to stool the gut immediately fell. This must have occurred between the age of three and four. I have no recollection of it whatever, but I believe that from that time I never evacuated the bowels without the gut coming down.

"'At the age of six, I was able to replace it myself, and having at that time left home, and entered a boarding-school, I was of course obliged to make the best of it. Then, and afterwards, I thought it a matter of course that I should suffer as I did. I always felt very keenly the difference betwixt myself and other boys. I could neither jump, run, nor play in any way like

them, and was a poor hand at most games, from a strong fear of 'receiving a blow on the back.' I have frequently been struck on the back with a hand ball, after which I felt overcome for the rest of the day. I always felt ashamed to speak to any one about the gut, and spent my years at school in silent suffering. Many a time have I felt cut to the heart by the boys calling me 'heavy bottom!' knowing that justly I did not deserve the name, but that my want of agility was caused by what I then began to call 'my weakness in the back.' I was quite uncared for at school, with respect to this weakness, and the teachers have frequently joined in the laugh against 'poor heavy bottom!' During my first two or three years at school, this hurt me very much, and my spirits, already overcome by my complaint, were increasingly depressed by frequent shedding of tears in secret. I mention this merely to show what a poor child may suffer when neglected.

"'After the age of nine, I had sufficient sense to refrain from joining in any but very quiet games, where there was no running, pushing about, or any danger of rough movements. Being obliged always to accompany the other boys, I used to sit a solitary spectator of their games, and I well remember, that when any boy happened to come rushing near me, I had a standing cry of terror—'I'm not playing, I'm not playing!'

"'I always considered myself a most unfortunate boy as I advanced in years, and I had no one to whom I could communicate any feelings, excepting during my yearly holidays of five or six weeks, which I spent at home. On these occasions, both my father and mother were always very anxious about me, and tried to get me to do many things, with a view to effect a cure, but I was then too glad to enjoy the short opportunity I had of joining in all the pleasures of home, and used to tell them that 'I did not mind it.' The only thing they got me to do, was to sit in water which had been boiled with oak bark.

"'On my return to school, matters always went on as usual, and thus I passed my early years. I never could undergo the same amount of fatigue as others of my own age and apparent strength. In severe cold weather, I was generally in a state of shivering, except when leaning over a fire—skating being almost the only exercise at which I could get thoroughly warm.

"'In December, 1845, I sailed from this country for Ceylon, and during the voyage was more troubled than I had ever been before with indigestion and constipation, which caused great straining of the bowels.

"'In April, 1846, I arrived at Ceylon, and was for a long time under a strong impression that the climate suited me well. Towards the end of my first year's stay in the island, the bowels became more slackened than usual, and the gut protruded further than formerly, but I did not take any particular notice of this at the time. Towards the end of 1848, I was obliged to go more frequently to the water-closet, and the straining became more and more severe, so much so, that I had often to stay half-an-hour, and sometimes longer, before I could push up the rectum.

"'In the beginning of 1849, blood and mucus began to pass so freely, that I took medical advice. Simple diet and the use of the enema were recommended, but the malady increased. In the month of March, my medical friend told me that my only chance of recovery was to return to England.

"'Up to this time the anus retained its usual natural appearance; but I now found an excrescence on the sphincter like a long wart, the top of which was open, and discharged a sticky waxy sort of matter. To this I was advised to apply caustic, which I did, but one trial was quite enough, I never touched it a second time.

"'During former years, the appearance of the rectum was a healthy red, but it now began to look dark and inflamed, and towards its outer edge was covered with little growths like the tops of a cocks-comb.

"'In the month of May I sailed for England. The first circumstance which alarmed me in connection with my illness, occurred on the morning I left the island. On getting out of bed, I had hardly stood upright, when a quantity of stuff fell from me (without my feeling anything of it), it was a jelly-like substance, and looked very much like prepared arrow-root, coloured with port-wine. During my voyage, I was constantly passing this bloody mucus; and, as I lived almost entirely on arrow-root and sago, I passed but little fæces.

"'The discharging excrescences on the anus, like the one above described, increased in number, and I was tortured by the sea-doctor, with an application of strong pepper to the affected parts. Like the caustic, however, I never applied it a second time.

"'Several times during the voyage, I almost lost entire control over the rectum, and felt as if it would fall out, and remain so in spite of me.

"'I reached London in the end of June, in a state of great exhaustion. I was almost as helpless as a child, and had it not been for the kindness of some of my fellow-passengers, and the strangers who took care of my luggage, and found lodgings for me, &c., I know not what I should have done.

"'After a stay at Richmond, my strength began to increase, so that I could walk without assistance, and was soon able to undertake the journey, by sea, to the North of Scotland, without a protector.

"'During the winter of 1849-50, I had kind medical advice, but the rectum and anus continued in an inflamed and shattered state, and my life was still a misery and burden. Constant running to the water-closet—continued straining—rectum bleeding, and the constant flow of discharge made me think that I was to remain for life unfit for any of its duties.

"'In 1851, I was placed under the care of Dr. Macleod of Benrhydding. The use of the sitz-bath, and spouting water on the lower part of the back, were the principal items of treatment, with occasional slipper and such like baths. This treatment was the first from which I derived benefit—the rectum and its vicinity resumed a healthy red appearance; the straining was not so great, the discharge and bleeding lessened, my strength greatly increased, I could often walk a mile without much inconvenience, the stomach and digestive powers restored to action (indeed they seemed entirely renewed), and the whole system changed from a diseased to a healthy condition.

"'The prolapsus still remained, and, during a residence in London with sedentary employment and confinement in 1852, and beginning of 1853, it became very much worse. Its size increased, and it bled very profusely. I had more difficulty in replacing it, and frequently could not do so until I had soaked it for fifteen or twenty minutes in a basin of water. I have had this to do three, four, and five times a day. The attitude in which I had to place myself over the basin was so awkward, that it aided in exhausting my strength, and I had invariably to lie down for half an hour, or longer, after having succeeded in pushing up the rectum.

"'Since the beginning of 1849, I had always bled more or less when straining with the rectum, but the flow of blood was now greater than ever. It often ran in a perfect jet, as if a vein had been opened with a lancet, and when occasionally I have raised the rectum out of the basin, in the act of straining, the blood has spurted six or seven feet across the floor.

"'One other feature of the case I will mention, which made me very miserable. I do not know that I can describe it correctly, but I will try. When the large ball of the rectum came down, the heart or centre of it frequently filled with fæces, and so distended it, that in this state it was impossible to replace it. Occasionally it would empty itself slowly, after I had soaked the rectum for some time in warm water; but I frequently had to introduce my finger, and take them out piece by piece, before it could be pushed up, and then it was always accomplished with difficulty.

"'In February, 1853, I had a severe attack of diarrhœa, which reduced me very much in strength, and increased the diseased state of the rectum. In the month following, I visited Mid-Calder, with a view to recover my strength, and there met my kind friend, Dr. Dick, through whose friendly interest, in the month of April, I received from your hands that act of kindness which relieved me from the troubles of the prolapsus, and which I ever remember with a sense of the deepest gratitude.'"

Art. 100.—*A new method of Puncturing the Bladder.* By M. Santopadre.

(*Bull. delle Scienzi Med.*; and *Gaz. Méd. de Paris*, March 7, 1856.)

The instrument employed in the following case may be described as a trocar of the same length and form as the lithotrite of Heurteloup. The central stem was made flexible, so as to allow the necessary backward and forward motion through the curved portion of the sheath by the insertion of a spiral spring. When the instrument was being introduced the pointed stem was drawn back within the sheath. This instrument was suggested and tested by the following case:

Case.—A man, æt. 65, hemiplegic, was admitted into hospital on the 2d of December, 1854, for retention of urine depending upon an enlarged condition of the prostate. This retention had existed four days. The bladder was distended to the umbilicus, and the constitutional distress was extreme.

The patient was placed in the ordinary position for catheterism, and the sheath of the instrument already described was introduced up to the point of obstruction, its course being under the guidance of a finger introduced into the rectum. Then the pointed stem was pushed forwards in the direction of the prostatic portion of the bladder. The bladder was penetrated without any difficulty, and with very little pain. There was hardly any bleeding at the time, and there was no constitutional disturbance afterwards. Twenty days later, the patient was well enough to leave the hospital.

Three months after this time the patient died of apoplexy, and an opportunity was thus given of examining the parts. The report is that the urethra was perfectly whole, and of sufficient capacity to allow the passage of an ordinary sound, and that the prostate was of double the natural size. The course of the instrument through it could not be traced.

Art. 101.—*Lupulin in Spermatorrhœa.* By Dr. Pescheck.

(*Buchner's Repert. für Pharm.*, No. 1, 1856; and *Med.-Chir. Rev.*, July, 1856.)

"Dr. Pescheck has employed lupulin for several years in a great number of cases in which spermatorrhœa seemed to depend upon no

mechanical cause. At first, he used to give two grains night and morning; but finding such doses of no avail, he prescribed from ten to fifteen grains to be taken just before bedtime, prohibiting the drinking of water after it. From such doses, even continued for a long time, he has found no inconvenience to arise, while they have acted beneficially on the disease. In some cases he combined with it one or two grains of pulv. digitalis. A valuable peculiarity in the operation of the lupulin, is the beneficial action it exerts upon the digestive process, which so often suffers in these cases. It is also very useful in mitigating the urethral irritation and discharges consequent on former excesses, and in many cases more so than iron or quinine. Its especial utility in the chordee of gonorrhœa, Dr. Pescheck has had many opportunities of witnessing. It is best administered without any additions that might diminish its bitterness, as its effects are very proportionate to the intensity of this property. Old lupulin deprived of its oil and bitter taste is almost always useless."

ART. 102.—*A simple method of reducing Dislocation of the Humerus into the Axilla.* By Mr. BIRKETT, Surgeon to Guy's Hospital.

(*Lancet*, Feb. 2, 1856.)

In this mode all the conditions required for the reduction of such a dislocation were easily obtained.

1. Perfect loss of voluntary muscular contraction from the chloroform.

2. Counter-extension, made by fixing the scapula with the index finger and thumb of the right hand.

3. Extension by the operator at the most desirable part of the injury.

4. And lastly, a fulcrum, formed also by the operator's hand, upon which the head of the humerus was thrust outwards from the axilla.

The whole arrangement was thus under the control of a single operator, which must be considered of the greatest practical importance.

This plan is much more neat and delicate than that of placing the heel in the axilla, or of having two or more individuals to effect that which in this individual was so easily accomplished by one.

CASE.—A healthy, robust, agricultural labourer, was admitted into the Cornelius Ward on January 11th, 1856. He stated that on the 7th ultimo, whilst in a state of intoxication, he fell down and injured his right shoulder. He did not apply to any surgeon until three weeks after the accident, when an attempt at reduction was unsuccessfully made. After admission into the hospital there was found, on examination, an exceedingly well-marked case of dislocation of the head of the humerus completely into the axilla. The head of the bone was directly beneath the glenoid cavity, neither in front of it, nor behind it. There was considerable swelling of the shoulder. Chloroform was administered, and the man was placed on his back. Then, under the direction of Mr. Birkett, Mr. Valentine (the dresser, from whose notes the history of the case is taken), standing at the side of the patient, placed his right hand against the axillary region of his chest, pressing his index finger against the

coracoid process of the scapula, and his thumb against the inferior costa of the same bone, when the arm of the patient almost formed a right angle with his body. The head of the dislocated humerus was then lodged against, or in, the fossa formed by the heads of the metacarpal bones of the dresser's index finger and thumb, which thus formed a fulcrum upon which the caput humeri necessarily impinged. By this disposition of the right hand of the dresser, the counter-extension upon the scapula was made, and that bone firmly fixed. Extension was then made upon the dislocated humerus by grasping the arm with the left hand; and in this way as much force as the operator was capable of exerting was freely employed. Immediately after all voluntary muscular contraction ceased, Mr. Valentine performed extension on the patient's arm for a few seconds, and then, on his bringing it down from its position at right angles with the body to the chest on the fulcrum formed by his right hand, the head of the humerus was replaced in the glenoid cavity, the replacement being indicated by a jerk.

(c) CONCERNING THE UPPER EXTREMITY.

Art. 103.—*On a simple mode of reducing a Dislocated Elbow.* By M. Bidard, of Arras.

(*Gaz. Hebdom. de Méd. et Chir.*, Aug. 15, 1856.)

In a recent communication to the Société de Chirurgie de Paris, M. Bidard relates a case in which a dislocated elbow was reduced in a very simple manner, after the ordinary means had failed. A child, æt. 13, had dislocated his elbow, and the dislocation had been reduced in the ordinary way. A month later the elbow was again dislocated. On this occasion the child said nothing about the accident, and five weeks passed before the mischief was discovered and the attempts at reduction repeated. These attempts failed. It then occurred to M. Bidard to persuade the child to swing himself by both his hands from a cross beam of wood, and to allow his hands to be held in this position by another person when he became tired. These swingings were continued for fifteen or twenty minutes at a time, and repeated every morning and evening; and the result was that the displacement had entirely disappeared on the seventh day. It appears from the account, that the displacement diminished progressing between the first and ninth suspension; and that the rest of the deformity disappeared suddenly during the fourteenth suspension.

This method, as M. Larrey observed afterwards, possesses some analogy to that of the *door*, as formerly practised by some surgeons, but with this difference, that the reduction is effected gradually in this case and suddenly in that.

As to the rest, we are disposed to think that there need have been no difficulty if chloroform had been employed; for, unquestionably, dislocations of much older standing are easily reducible with the help of this agent.

ART. 104.—*On Sub-arterial Cysts of the Wrist.* By M. CHASSAIGNAC.

(*Mon. des Hôp.*, No. 78, 1856; and *Med.-Chir. Rev.*, Oct., 1856.)

M. Chassaignac calls attention to a form of ganglion which, placed beneath the radial artery, unless properly understood, may give rise to very serious errors. From excess of labour, or the exertions necessary to raise heavy burthens, the small tumour may acquire considerable development. The fingers of the surgeons, when applied over the cyst, are raised by the pulsations, which are remarkable for their energy and the breadth of space they extend over. This extent of pulsatile surface immediately suggests the idea of radial aneurism, and if the examination be continued with the limb remaining in its ordinary attitude, an error can scarcely be avoided. The differential diagnosis may be established by bringing the wrist into a state of forced flexion, when—whether it is that the artery is displaced, or that it ceases to be stretched over the eminence formed by the cyst—the pulsations no longer exist, and it is evident that no aneurism is present. In treating these cases, M. Chassaignac employs the iodide of potash ointment, rubbing it in every two hours during a week. On the dorsal surface we may treat ganglia with advantage by crushing them, by subcutaneous puncture, seton, or iodine injection; but in the case of these sub-arterial cysts of the wrist, which are in communication with the radio-carpal articulation, these means of treatment are not applicable. The iodine frictions give rise to no accident, and seemed possessed of all desirable efficacy.

On one occasion, M. Chassaignac had the opportunity of examining one of these cysts in a subject brought for dissection. The tumour resembled an almond in form and size, and occupied the space between the tendons of the *supinator longus* and the *palmaris longus*, lying on the anterior portion of the *pronator quadratus*. The radial artery in its downward progress having reached the upper part of the tumour, was at first so intimately connected with its front part as to seem to form a portion of its walls. Very soon, however, it deviated obliquely on its external side, and reached the fossette called the anatomical snuff-box. With the object of ascertaining the anatomical origin of the tumour, it was dissected with the greatest care, and separated from all parts with which it had not contracted fixed adhesions. In this way it was circumscribed for four fifths of its extent, but posteriorly and below it was firmly fixed to the bone by a kind of pedicle proceeding from the anterior part of the lower radio-cubital articulation. It was only, in fact, a diverticulum of the synovial membrane of this joint, and it had raised up the lower fibres of the *pronator quadratus*, which, forming a kind of arc, produced a sort of strangulation of the pedicle at its upper part. The continuity of the cyst with the articulation was completely demonstrated, a probe freely passing from one to the other.

ART. 105.—*On Dislocation of the Thumb at the metacarpo-phalangeal articulation.* By Dr. BATCHELDER.

(*New York Journal of Medicine*, May, 1856.)

The mode of reduction described below is very similar to that which was recently described by Dr. John Doe (*v.* 'Abstract,' XVIII, p. 190. Dr. Batchelder informs us that this mode has been publicly practised by him for several years:

"The uniform failure of the ordinary mode and means of reduction prevailed on Blandin to invent a pair of forceps (known in all our shops as Blandin's forceps), for making the extension more effectual; but, so far as I have had an opportunity of knowing, these and all the other methods have generally failed, unless the lateral ligaments of the joint were divided by a subcutaneous incision, as suggested by Sir Charles Bell. Most surgeons, among whom are Sir Charles Bell and Mr. Hey, impute the difficulty to these ligaments, between which the head of the bone is forced, and by which, being put thus on the stretch, it is steadfastly retained; they seem, however, to have forgotten or overlooked the fact that there are two sesamoid bones, lodged one on each side of this joint in the tendons of the flexor brevis pollicis, between which the inferior extremity of the metacarpal bone is forced forward and 'projects very much inward, towards the palm of the hand, and the extremity of the phalanx projects backward.' In this displacement, parts of the flexor brevis are put on the stretch, which, acting like extensors, draw the proximal extremity of the phalanx upward along the posterior surface of the metacarpal bone, and fix it there; hence, every attempt at extension, only makes the matter worse. How, then, is this difficulty to be overcome, and the reduction accomplished? Not by extension, of course; but in the following manner. The surgeon should take the metacarpal portion of the dislocated thumb between the thumb and finger of one hand, and flex or force it as far as may be into the palm of the hand, for the purpose of relaxing the muscles connected with the proximal end of the phalanx, particularly the flexor brevis pollicis. He should then apply the end of the thumb of this hand against the displaced extremity of the dislocated phalanx, for the purpose of forcing it downwards, and at the same time grasp the displaced thumb with his other hand, and move it forcibly backwards and forwards, as in strongly forced flexion and extension, the pressure against the upper extremity of the first phalanx being kept up. In this way the dislocated bone may be made to descend, so as to be almost or quite on a line with the articulating surface of the metacarpal bone, when the thumb may be forcibly flexed, and, if it be not reduced, as forcibly extended, and brought backward to a right angle with the metacarpal bone, when, if the downward pressure, with the thumb placed as before directed for that purpose, has been continued (which thumb, by maintaining its position, acts as a fulcrum, as well as by its pressure), the bone will slip into its place, and the reduction be effected in less time than has been spent in describing the process. I derived

the first hint of this procedure from hearing an empiric, somewhat noted as a bone-setter, describe the process by which he had succeeded, in a similar case. This occurred about the time I commenced the study of medicine, and from the manner in which it was told, the relation has never escaped my memory; but from his being considered somewhat of a quack, and moreover, a professional braggart, it was not subsequently analysed or acted on, until after I had failed in a case of the kind. That failure induced me to investigate its causes in the dissecting room, which brought up a vivid recollection of the statements of the bone-setter; and the consequent analysis of the anatomical relations of the parts involved, resulted in the adoption of the method just described, which I believe will always be attended with prompt success, especially in recent cases; and also in those of considerable standing, say a week or two."

ART. 106.—*On the desirability of removing part of the Metacarpal Bone in amputating a finger.* By Mr. HILTON, Surgeon to Guy's Hospital.

(*Assoc. Med. Journ.*, June 7, 1856.)

At a recent operation in Guy's Hospital, Mr. Hilton dwelt on the desirability of removing part of the metacarpal bone in amputating a finger. A V-shaped incision was made in the back of the hand, and the head of the metacarpal bone, as well as the finger, were removed. A much more shapely and useful hand is left by this mode of operating.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 107.—*Internal derangement of the Knee-joint.* By Dr. GORDON BUCK, Surgeon to the New York Hospital.

(*Philadelphia Medical Examiner*, Aug., 1856.)

The following case corresponds with great exactness to the description of this rare and perplexing accident, as given by the late Mr. Hey, of Leeds, in his 'Observations on Surgery:'

CASE.—"On the morning of May 24th, 1856, Mr. S—, of Lowell, Massachusetts, called on account of a lameness of his left knee that had suddenly occurred the evening before, at the moment of rising up from a position in which his knee was sharply flexed under him. He could now no longer apply the sole of his foot to the floor in walking, but was obliged to bear his weight on his toes, with the knee maintained in a slightly flexed position, and as if anchylosed. Any attempt to straighten the knee to its full extent was resisted on account of the pain it produced, which was referred to the anterior space between the inner condyle of the femur and the corresponding head of the tibia. At this point *alone*, pressure gave pain when applied with the end of the thumb forced deep into the space between the bones. It was thought, too, that the end of the thumb did not penetrate as deep into this space as in other knee. There was no tenderness on pressure of any other part of the

joint. There was no swelling or any change in the form of the joint. The same accident had occurred to him on several previous occasions; but Mr. S. had been able to get prompt relief without surgical aid, by having the limb stretched and repeatedly flexed and extended. In this instance, however, his efforts had been unsuccessful. Regarding a displacement of the inner semilunar cartilage forwards, as the cause of this derangement of the joint, the reduction of it was attempted in the following manner, as advised by Mr. Hey: the patient being placed in a chair, the limb was raised above a horizontal position and the leg flexed on the thigh to its full extent, and then extended in like manner, at the same time pressure being applied over the advanced cartilage with the end of the thumb. This latter movement of extension and pressure gave severe pain, while flexion caused none. This manœuvre was repeated several times, till, at length, while urging the extension to its full degree, the patient suddenly grasped the knee with both hands, and begged we would proceed gradually, as he felt the cartilage slowly slipping back to its place. In another moment he sprang upon the floor, and stamping with his lame foot, exclaimed with delight, 'I am all right again.'"

Art. 108.—*A case of unusual Dislocation of the Patella.* By Dr. Wragg.

(*Charleston Med. Journal and Review*, May, 1856.)

This case is one of considerable interest. It is described as one of *complete* revolution of the bone on its long axis; but in reality only half a revolution upon this axis was accomplished.

Case.—On the 29th June, 1855, a black man was engaged in loading lumber upon a boat. It was conveyed by means of a car running on rails. He carelessly allowed himself to be caught by the loaded car, while it was in motion, and jammed against the cross sticks on which the piles of lumber rested. The accident occurred about 5 o'clock p.m., and I saw him in half an hour. He was lying on his back, and his right leg was stretched stiffly out. The knee was entirely changed in form. A sharp and prominent edge was apparent on the outer part of the joint, projecting about half an inch forward of the normal plane of the anterior face of the patella, and about the same distance over the outer edge of the joint. Beneath this edge there was a depression into which the ends of the fingers could be readily passed, and at the bottom of which the outer edge of the articulating surface of the outer condyle of the femur could be felt. The inner part of the joint was flattened and depressed, and the fingers could readily detect the inner edge of the inner condyle of the femur, over which no portion of the patella rested. Passing the fingers from this point outwards, and pressing well upon the surface of the bone, a depressed edge was plainly felt, about half an inch or less from the rough elevation which borders the articulating surface of the inner condyle of the femur, on its inner edge. Above and below the patella an evident twist was discovered in the tendinous insertion of the extensor muscles, and in the ligament of the patella. The joint was stiff, and allowed but limited motion.

From these appearances I recognised a dislocation of the patella, by which the bone was twisted completely round on its longitudinal axis, so that its outer edge corresponded nearly to the inner edge of the articulating surface of the femur; its anterior face was turned backwards, and rested on the same articulating surface; its inner edge looked outwards and a little forwards, forming the projecting edge in front and on the outside of the joint; and its

posterior or articulating face was under the skin, looking forwards with a slight inclination inwards.

To remedy this displacement the indication was evident. It was, to untwist the part. But before attempting anything, it was necessary to determine the exact nature of the twist, whether in coming to its new position the projecting (inner) edge of the bone had passed forwards and then outwards, or backwards and outwards. An inspection of the parts, and a consideration of the manner in which the accident had happened, showed that the former was the true mechanism of the dislocation. The inspection showed this by the evident direction in the twist of the ligaments; and the manner in which the accident occurred proved the same state of things. Thus: the man was standing in front of the car, so placed against the pile of boards that his thigh was firmly fixed on its inner side, the outer and anterior part of the leg presenting to the approaching car. The projecting edge of the car, or the end of one of the boards with which it was loaded, struck the outer edge of the patella; and as the car moved on (the limb being firmly fixed), the force applied to the bone on its outer edge acted in such a way as to press this edge backwards and inwards, causing it to slip along the large articulating face of the external condyle, while the inner edge of the patella, following a converse direction, was tilted forwards. Had the force ceased to act at this point, there would have been a dislocation to the extent of that already described by several authors, only that instead of the outer edge of the patella presenting forwards, the inner edge backwards, the posterior or articulating face outwards, and the anterior face inwards, the positions would have been just the reverse. But as the force did not cease to act, nor the bone to yield to it, the outer edge of the patella was driven onwards and made to mount the small articulating face of the inner condyle. Here it rested; and as the inner edge of the bone was performing a counter movement under the skin, the result was a complete revolution of the patella on its long axis.

An inspection of the two bones concerned in this dislocation will show that when their relative positions have been changed in the manner and to the extent described, the appearances given to the joint must necessarily be such as were seen in this case. The articulating surfaces of the bones are both divided into two parts: that of the patella by an elevated ridge, and that of the femur by a deep depression. In both the bones the outer of these surfaces are large, the inner small; the outer surface of the patella being larger than that of the femur, so that the outer edge of the former bone overlaps the the outer edge of the latter. From this arrangement of the parts it follows, that when the patella is displaced in the manner now under consideration, its inner border must project slightly beyond the outer border of the external condyle of the femur, and thus give rise to one of the most striking symptoms of the luxation, viz., the well-defined prominence which was given to the outer part of the knee-joint in the case before us, and also to other symptoms described by authors, viz., the perceptible ridge under the skin due to the ridge on the posterior face of the patella.

Again: of the two surfaces of the femur the outer is much the most prominent, while of the two edges of the patella the inner is much the thicker; hence in the new position of the bone an unnatural prominence must be given to the outer part of the joint. This alteration in the shape of the knee was another striking symptom in the dislocation.

From a consideration of all these points there could be no doubt that the bone had come into its new position by an entire revolution, in which its outer edge (which received the force) revolved from before backwards, and from without inwards, the inner edge performing a counter movement in cor-

respondence with that of the outer. In a thin-skinned subject there will probably be no difficulty in discriminating the surface which is presenting under the skin by the prominent ridge which divides the articulating faces; for if this be detected with the fingers, it must remove all uncertainty as to which face of the bones is forward.

* * * * *

The reduction was effected without difficulty. The thumbs of both hands being placed on the outer and under edge of the projecting border of the patella, while the index and middle fingers were pressed against the other border in a direction outwards and backwards, force was applied with a view to roll the bone over into its place. The first efforts failing, a by-stander was directed to pass his hands under the knee-joint, and make forcible and intermittent flexion of the leg. In a moment the bone performed its evolution, slipped into its place, and the man rose up and walked. He experienced no further inconvenience, the ligaments, cartilages, and investing membranes of the joint having received no injury whatever from this extensive displacement.

Art. 109.—*On the treatment of Inverted Toe-nail.* By Mr. Lovegrove, of Brighton.

(*Lancet*, Aug. 30, 1856.)

The idea here carried out is borrowed, Mr. Lovegrove tells us, from some forgotten surgical work. At any rate it is a very good one.

Case.—"A young person, about 26 years of age, had been under a surgeon of some renown in London for three or four months, and in spite of all the means usually adopted in such cases, continued to get worse. She visited Brighton, and consequently the case came under my notice; I saw at once it was a fair opportunity of trying this new idea, which is as follows: The nail, which is usually very thick on the great toe, was scraped moderately thin with a piece of glass, and then the whole surface covered with a good coating of nitrate of silver, which was accomplished by rubbing the stick of silver carefully over the whole of the nail, moistened with a little water; after which a linseed-meal poultice (hot) was applied, and the next morning nearly the whole of the nail was separated from the flesh, and another milder application divided it entirely. The nail was then removed without the least pain, and the patient assured me she had not suffered at all during the whole operation. In less than a fortnight after the operation was completed, the patient wore her usual boots with comfort, and before leaving Brighton, a new nail was rapidly growing."

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 110.—*On Sterility in relation to the Vaginal Secretions.* By Dr. KÜCHENMEISTER.

(*Wien Wochenschrift*, No. 6, 1856; and *Med. Times and Gaz.*, Sept. 13th, 1856.)

SCANZONI, Tyler Smith, and others, have shown, that while the mucus of the vagina is acid, that of the cervix uteri is alkaline. If we compare these observations with those made by Moleschott and Kölliker, on the movements of spermatozoa in diluted alkaline fluids, we must perceive that these spermatozoa find a very favorable soil in the cervix uteri or the uterus itself, and a highly unfavorable one amidst the acid mucus of the vagina. One of the causes of sterility has long been known to be the deviation of the os uteri from the axis of the pelvis, the semen being unable to enter at once into the cervix. We can expect in such cases few living spermatozoa to reach the os by the laws of capillarity, and none at all if the vaginal secretions are very acid. That motionless spermatozoa will not fructify is well known; but whether motionless spermatozoa, brought by capillary action into contact with the uterus, are susceptible of being revivified by means of its alkaline mucus, is a point we are unable to reply to, though the probability is that they are not. Scanzoni and Kölliker have further shown, that when the vaginal discharge is abundant, the acid reaction is increased, and irritation extends to the outer edges and commencement of the cervix of the uterus, and the alkaline mucus then becomes converted into neutral—such neutral condition being a more unfavorable condition for the vivacity of the spermatozoa than the alkaline condition of the secretion. Another point, in relation to sterility, is the complete temporary and periodical closure of the os uteri, shown by Kölliker and Scanzoni to take place. In the ordinary state of things, when no abnormal irritation or secretion of the canal of the cervix is present, this canal is closed from one menstrual period to another, by means of mucus, either in the form of an arterial plug, or of a drop projecting from the external os. About the menstrual period, however, the secretory power of the canal is

aroused, the plug is cast out, and the passage becomes free. In most women, this issue of the cervical mucus continues for a short time after menstruation, when the canal again becomes closed: and we see the importance of this, in relation to the advice often usefully given to sterile women, to admit of coitus just before or just after the period.

In treating a patient for sterility, the practitioner should first of all make an examination with the speculum, to ascertain if any abnormal position or physical obstacle exists, and whether this last depends upon atresia, or plugging of the canal with mucus. He must repeat his examination at the menstrual periods, to ascertain when this plug becomes loosened and the canal free, and how long a time elapses after the period before it becomes again closed. Thus, suppose the plug is only separated during or soon after the period, having connection just prior to it will be of no avail. As the introduction of the semen into the uterus shortly before the occurrence of the period seems to favour impregnation, the canal of the cervix should be cleared out a day or two before this time, and coition then accomplished. In obstinate cases, the practitioner or a midwife acquainted with the use of the speculum, should clean out the cervical canal, by means of a pencil of charpie, and then inject a solution of basic phosphates of soda, or the alkaline carbonates, in the proportions employed by Moleschott and Kölliker, in their experiments upon the spermatozoa. Coitus should take place as soon after as possible. In many cases, the injection of the alkalies would suffice for rendering the canal free. In the most obstinate cases, where much depends upon the removal of the sterility, and when the canal first opens at the middle of the period, or towards its end, coitus should be recommended during the period itself, when, therapeutically and physiologically speaking, the canal is more certainly open, when the spermatozoa can most easily gain admission to the uterine cavity, when the ova have descended into it, and when the salts of the serum of the menstrual blood may confer upon the spermatozoa a more active and more prolonged vivacity.

Art. 111.— *On a cause of Vomiting in Pregnancy.* By M. Briau.

(*Gaz. Hebdom. de Méd. et Chir.*, July 18, 1856.)

The conclusions arising from the following case are—First, that unmanageable vomitings may be caused by the confinement of the gravid uterus in the hollow of the sacrum; and secondly, that these vomitings may immediately cease upon the correction of this irregular condition. M. Briau mentions that several cases of the kind have occurred in the practice of M. Moreau.

Case.—Madame X—, æt. 25, of lymphatic temperament, well formed, and healthy. Six years ago she was confined of her first child, and everything went on perfectly well. Three years afterwards she was confined again, and on this occasion also she went on well, with the exception of some feelings of malaise and vomiting during the first months. A few weeks afterwards, however, she was greatly startled by an accident, and from this time she suffered

more or less from leucorrhœal symptoms. Madame X— again became pregnant in March, 1856. About the middle of the month following she began to vomit, and these vomitings progressively became more and more unmanageable until nothing would remain on the stomach. Throughout the whole month of May she was affected with severe gastralgia, with constipation and continual thirst. Then she began to suffer from frequent cramps and convulsive movements, with sleeplessness and great depression of spirits.

M. Briau was called to the case on the 2d of May, and all the usual means were tried without success. Then an experiment in homœopathy was tried, and with the same result. M. Briau was recalled on the 2d of June, and on this occasion he suspected that the vomiting might depend upon some uterine displacement. He did this partly on account of the continuance of the leucorrhœal symptoms, and partly from the fact that the uterus could not be felt in the proper position. Two days later M. Moreau was called in consultation, and an examination made, when it was found that the uterus was in a state of incomplete retroversion, as well as in a state of incarceration in the hollow of the sacrum. This malposition was corrected without causing any pain to the patient, and immediately her former sufferings began to subside. On the same day the vomitings ceased, and some food remained on the stomach. On the night following she slept comfortably. In less than forty-eight hours the belly acquired the usual development belonging to the third month of pregnancy; and, in a word, the patient recovered rapidly, without another bad symptom.

Art. 112.—*Tincture of Iodine in the Vomiting of Pregnancy.* By Dr. Eulenberg, of Koblenz.

(*Preuss. Ver. Zeitung*, 25, 1856; and *Edinburgh Medical Journal*, Oct., 1856.)

Dr. Eulenberg, of Koblenz, says that this remedy, even in very small doses, is a most efficacious agent in arresting the troublesome vomiting which so often occurs in pregnant women. He orders the tincture in a very dilute form (Tinct. Iodin., ℈j; Spir. Vini. Rect., ʒiij; M.), and in small doses, three drops several times a day in water. The cardialgia which accompanies this morbid condition is also relieved by it. Dr. Eulenberg alleges that other sympathetic irritations, and neuroses of the nerves of the stomach, are alleviated by similar treatment. The author has not found iodide of potassium equally serviceable in the affections alluded to.

Art. 113.—*Carbonic Acid as a means of procuring Abortion.* By Professor Scanzoni, of Würzburg.

(*Weiner Med. Wochenschr.*, No. 11, 1856.)

M. Scanzoni was led to employ carbonic acid in this manner, partly by the marked congestion of the genital organs which resulted from a prolonged exposure to a stream of this gas, and partly by the experiments in which M. Brown-Séquard has shown that carbonic acid will provoke contraction in the muscles of organic life. The carbonic acid was generated in the ordinary way, in a Wolff's bottle, and carried to the uterus by an elastic tube, the end of which was fitted, by means of

a cork, into an ordinary glass uterine speculum. The quantity of gas was regulated by the amount of acid added to the bottle.

Case.—D. S—, æt. 26, a primipara, menstruating for the last time on the 26th of May, 1855, was received into the Maternity at Würzburg on the 29th of January, 1856. The antero-posterior diameter of the pelvis, which ought to be from four to four and a half inches, was not more than three and a quarter or three and a half, so that delivery at the full term was impossible.

On the 2d of February, at 8 p.m., the carbonic acid was applied for twenty minutes, but without any marked results.

On the day following, at 8 a.m., and again at 8 p.m., the gas was applied for about half an hour, and during the application the patient complained of disagreeable pricking sensations in the vagina. These sensations were followed in the course of the day by gripes around the navel. In the evening, the vaginal portion of the neck of the uterus was sensibly moistened.

On the 4th of February, the apparatus was applied morning and evening for about the same time as yesterday, and the former pricking sensations were produced. In the course of the day the neck of the uterus became dilated so as to allow the introduction of the tip of the finger. During the night, the patient suffered from sharp pains in the region of the uterus, and, towards the morning, distinct uterine contractions were felt by the hand placed over the organ. These contractions, however, passed off very speedily.

On the 5th of February, the gas was applied for half an hour, with the same local effects as previously. At this time the os uteri had dilated to the size of a two-franc piece, and was easily dilatable under the finger. The vaginal secretion, moreover, was sensibly increased. In the afternoon, the uterus again began to contract in a very decided manner. At 6·30 the membranes were ruptured, and the infant, weighing 1350 grammes, was expelled an hour later. There was some little hemorrhage during the delivery, which rendered it necessary to remove the placenta a quarter of an hour after the birth of the child. After this everything went on well.

Art. 114.—*On Cranial Presentations.* By Dr. R. U. West.

(*Glasgow Med. Journal*, Oct., 1856.)

The chief points to which Dr. R. U. West is desirous of directing attention in this memoir are:

1. A more correct appreciation of the diagnostic value of the presence of the ear at the symphysis pubis; the ear in the great majority of cranial presentations lying in that situation during the whole progress of the head into the pelvis.

2. That in *vertex* positions, the presence of the ear at the pubes proves that the head is already in a favorable oblique occipito-anterior position, becoming more and more so as the os occipitis comes more and more within contact, although the ear may not have left the symphysis.

3. When the occiput is fairly under the arch of the pubes in the last stage, the long diameter of the head will be found to be accurately in the long diameter of the outlet; the two lamboidal sutures being evenly one on each side of the symphysis, and the anterior fontanelle exactly on the raphe of the perinæum, as described by all writers except Nägele, and those who follow him.

4. That in this last position the ears are at each acetabulum, rather than at each ilium, as taught in books.

5. That the first and second most frequent positions of the vertex are, in the majority of cases, the converse of each other, as taught by nearly all writers, except Nägele.

6. That in his grand discovery of the universality of *bregmato-cotyloid* positions in the second position, he has deceived himself, by not reversing all the conditions, both of the patient in her position, and of the examining hand of the accoucheur.

7. That Nägele, in maintaining that his predecessors are all wrong in this matter, has deliberately confounded mere bregmato-cotyloid with *fronto*-cotyloid positions, the latter being always intended by writers, though they may have loosely denominated them presentations or positions of the *vertex*.

8. And that, therefore, Nägele is right in maintaining that the normal progress of the labour in bregmato-cotyloid positions, as in all true *vertex* ones, is for the occiput to make its way to the arch; and that quite as easily, *cæteris paribus*, as when the occiput lies originally most forward.

9. That there are only *two* positions of the *vertex;* that is, only two ways in which, in *vertex* presentations, the head enters the pelvis, and makes its way to the outlet.

10. That in all, or nearly all, presentations of the *vertex*, the occiput will surely come to the arch of the pubes by a natural and necessary process; and that whether the vertex presentation be bregmato-anterior or bregmato-posterior originally.

11. That the cases which terminate with the face or forehead at the pubes, are originally positions in which the uterine efforts are so perversely directed, that the forehead gets down into the pelvis during the first stage.

12. That, in that first stage, the ear is usually at the symphysis, as it is also in vertex presentations.

13. That in these perverse cases, which are usually *bregma* presentations, the ears will really occupy opposite parts of the pelvis, the head lying at first with its long diameter in a transverse position across the pelvis.

14. So that some of them may terminate with the occiput at the arch, after a very hard labour.

15. But the original perverseness in the direction of the uterine efforts, which has placed the head in this unfavorable position, continuing, the anterior or frontal end of the head will frequently pass first to the floor of the pelvis, and then come forward to the arch of the pubes.

16. That Nägele, on his own showing, had never seen a genuine case of true *fronto*-anterior position, incredible though it may seem; at any rate, such a case as is described by nearly all writers, and as is met with continually in practice. He decidedly ignores all such cases.

17. That Nägele is quite as wrong in maintaining that all first positions are originally *occipito-cotyloid*, as that all second positions are originally *bregmato-cotyloid;* bregmato-cotyloid positions, in the former

class of cases, being common enough, and having been overlooked through the method of examination.

18. But that most of the bregmato-cotyloid positions met with are merely instances of a kind of *deceptio factûs.*

19. For it is only necessary to place the patient on her other side, and to use the other hand in examining, in order to be convinced that the first and second positions of the vertex are the converse of each other in *every respect.*

20. And that, although there may be quite sufficient in the patient's position to account for this *deceptio*, we may be justified in taking into consideration, also, the deceptive impression conveyed to the finger, when it is passed *blindfold* from one point to another of a globular surface, along a line ordinarily looked upon as a straight one, lying over that *globular* surface.

21. That it is no wonder that disputes and discrepancies should have arisen among authors, when we find one set speaking of presentations of the "vertex," and meaning presentations of *any part of the whole cranium;* while another set, like Nägele, speak of "*cranial* positions," meaning positions of the *vertex* exclusively.

22. And finally, that the dispute between Nägele, and those whom he so utterly condemns as guilty of *ignorance* ('Unkunde der Art und Weise,' &c.), is something like the quarrel between the two knights about the shield which was gold on one side and silver on the other.

Art. 115.—*Rules for the performance of the Cæsarian Section.* By Dr. Genth, of Schwalbach.

(*Verhandl. der Ges. für Geburtsh. in Berlin*, viii, 1855; and *Edinburgh Medical Journal*, Nov., 1856.)

This formidable operation (to judge from the frequency with which we meet cases of its performance in the medical journals) seems becoming a favorite operation in Germany. Dr. Genth, of Schwalbach, has published an interesting case, which he read to the Berlin Obstetric Society, in which he performed it successfully in the case of a rachitic woman with contracted pelvis. He believes that, for the favorable performance of the operation, in addition to the careful application of cold to the abdomen (in the form of ice-water dressings), for the first three days, the following points should be attended to: 1st. The timely performance of the operation, without having previously exhausted the patient by trying other modes of artificial delivery. 2d. The obtaining, in good time, copious alvine evacuations. 3d. The exhibition, for some weeks, of medicines which soothe the nervous system, especially of opium. 4th. The wearing of a plaster to afford efficient and permanent support to the abdomen. 5th. The allowing the lower angle of the abdominal wound to remain open for six weeks.

ART. 116.—*Statistics of Operative Widwifery.* By Dr. RICKER.

(*Monatschr. für Geburts.*, Bd. vi, pp. 81-101 ; and *Med. Times and Gazette*, Oct. 11, 1856.)

This interesting contribution is derived from midwifery practice in the Grand Duchy of Nassau. This contains 429,341 inhabitants, and there are 100 civil practitioners, besides 20 others who practise while holding military or other appointments. These practitioners are required to make half-yearly returns, stating the characters of prevalent disease, the most remarkable of the surgical cases, and all the midwifery cases. The author has had access to the midwifery returns, and furnishes here an account of the results of his examination, as far as operative midwifery is concerned. Between 1821 and 1842 inclusive, *i. e.* 22 years, 304,150 births were recorded.

1. *Forceps.*—These were employed in 4223 cases, or about 1 in 72 cases. As, however, the earlier returns were somewhat incomplete, Dr. Ricker believes that 1 in 70 would be nearer the mark. The results were that 93 of the mothers died either during or soon after the operation, and that 684 children were born dead; being 1 death in 45 of the mothers, and 1 in 6 of the children. The indications for the employment of forceps are noted in 708 of the cases only, viz.:

Disproportion of size in the head and pelvis	287
Absence or feebleness of pains	269
Weakness or exhaustion of patient	33
Prolapsus of funis	29
Spasmodic or violent pains	22
Face presentation	20
Convulsions	12
Descent of parts with head	8
Placenta prævia	3
Faulty presentation of head	7
Rigidity	4
Tumefaction of pudenda	4
Erysipelas pudendi	7
Putrescency	1

2. *Turning.*—There were 10 cases of cephalic version, and 2473 of turning by the foot, or 1 in 123. The results were 176 deaths on the part of the mother, or 1 in 14, while 1431 children were born dead, or died soon after, or nearly 1 in 2. The indication for turning is recorded in 530 cases, viz.:

Transverse presentation	388
Placenta prævia	82
Prolapse of funis	28
Narrow pelvis	18
Hemorrhage	5
Other dangerous affections	4
Face presentation	2
Faulty presentation of head	2
Convulsions	1

3. *Perforation* was resorted to in 143 instances, or 1 in 2126. There were recorded 88 recoveries and 35 deaths, while in 20 cases no results are given.

4. *Dismemberment* was effected in 22 cases, 16 mothers recovering, and 6 dying.

5. *Cæsarian section.*—Between 1821 and 1843, with 311,409 births, this operation was performed 12 times, 2 mothers and seven children being saved. This gives about one Cæsarian operation in 26,000 births. The operation was performed 33 times after the death of the mother, but none of the children were saved.

The author compares these results with the statistical accounts of the authors; but these being well known we have not quoted them.

Art. 117.—*On Chloroform in Labour.* By Prof. Scanzoni.

(*Monatschr. für Geburts.*, Bd. vi, p. 461; and *Medical Times and Gazette*, Sept. 13, 1856.)

1. *In normal labour.*—Notwithstanding the flattering accounts from Britain, Professor Scanzoni has found so many disadvantages result from its use, that he is averse to the employment of chloroform in entirely natural labour. The uterine contractions are at all events temporarily diminished in both force and frequency, while the adjuvatory action of the abdominal muscles is weakened. Lying-in women require much larger doses to induce narcosis than others, apparently because the inspiration is often interrupted by the pains, while the entire nervous system is more blunted, as is seen from the feeble action of other medicinal agents, as opium, &c. Perhaps, too, the more watery state of the blood admits, as in the chlorotic or hysterical, of an increased employment of these. This diminished sensibility explains the harmlessness of the means, and the fact that no death has hitherto been recorded consequent upon its obstetrical application. Nor are the after consequences, such as delirium, headache, convulsions, &c., that so often occur under other circumstances, met with here. On the other hand, however, chloroform imparts a decided inclination to hemorrhage during or after the fifth stage of labour, against which the administration of ergot, shortly prior to the expulsion of the child, does not offer any certain security.

2. *In abnormal labour.*—(*a*) In too precipitate labours, the chloroform is well suited to effect a decided weakening and delay of the pains. (*b*) In spasmodic pains, when the patient suffers much from their severity, and is very restless, and when warm application, opium, or venesection have been employed in vain, chloroform is indicated. (*c*) In spastic stricture of the os uteri, chloroform always leads to a relaxation of the tense, unyielding edges; but as such spastic contractions are known to be conjoined with relaxation of the body and fundus of the organ, we should not continue its use too long (at most half an hour), and should try other means before resorting to it at all. As soon as the strictured condition is relieved also, we must endeavour to induce strong labour-pains by means of warm injections, &c. Stricture occurring during the last stage of labour is easily subdued by chloro-

form; but here it must be very carefully employed, in consequence of the danger of hemorrhage. (*d*) In tetanus of the uterus chloroform is always admissible and useful, and its employment much facilitates turning, so often required in these cases—these tetanic spasms usually only occurring when some mechanical impediment irritates the uterus into increased action. (*e*) In threatened abortion, the author has found chloroform very useful in calming pains that menaced this occurrence. (*f*) In eclampsia, Professor Scanzoni has employed it eight times, and has arrived at the conviction that, if not infallible, it is one of the most certain means of subduing the attacks. Sometimes it is difficult to effect the narcosis, but this can always be done by perseverance. When the disease is obstinate and long, and the inhalations have to be often repeated, these are best employed on the very first appearance of each attack. (*g*) In excessively severe pains, whatever may be their cause, chloroform does good service. (*h*) In after-pains it is also to be recommended. In a case, however, that occurred to M. Scanzoni, the child, put to the breast three hours after the mother had been narcotized, fell into a deep sleep that lasted eight hours, and caused uneasiness respecting it for two days after.

3. *In obstetrical operations.*—Here the chloroform is always indicated, and so great are its advantages that it is incredible that several practitioners still neglect its employment. In pelvic presentations it should not be resorted to, as the delay of the labour that may follow might prove dangerous to the child.

[ART. 118.—*On irregular Contraction of the Uterus.*
By Dr. CHANNING.

(*Boston Journal*, vol. liv, pp. 309-318; and *Medical Times and Gazette*, Aug. 23, 1856.)

Dr. Channing observes, that he never now meets with the hour-glass contractions he supposed to occur in his earlier practice. The following is his account of the nature and cause of these irregular contractions. "In these cases referred to the following facts have been observed: They have most generally occurred in first labours. Everything has proceeded naturally, it may be, through all its stages. The after-birth has been expelled, and the patient may have been arranged in her bed. Sometimes, however, before this, pain may have been complained of. This increases until it amounts to agony, with expulsive efforts. The abdomen is examined externally. In about its middle, or higher, a hard ball-like tumour is felt, very sensitive, and easily distinguished from everything about it. Below this the abdomen feels soft, and bears pressure without any complaint. Not a sign of hemorrhage is present. We think of after-pains and of their accidental exaggerations. But it is a first labour—a perfectly natural one—and after-pains are rare under such circumstances. We examine per vaginam. Severe suffering is complained of. We have scarcely entered it when a firm obstruction is encountered. We proceed along one of its sides, and discover a very large coagulum. We go on, and at length feel the firm contracted portion of the womb above. The open hand is now passed above the coagulum, and slowly

presses it downwards and out. Relief is instantaneous. Slowly the hard tumour descends, under regular but insensible contraction, and gets its natural place above the symphysis. Rarely is relief expressed so completely as after this operation; not even when the head is passing the external organs. These cases strikingly resemble each other, and when once seen they will always afterwards be easily recognised."

This condition may be confounded with retained placenta, inverted uterus, severe after-pains, and internal hemorrhage. Of the first of these the author gives instances, and the characters of inversion of the uterus are sufficiently obvious to prevent error. After-pains do not usually follow first labours, and when present in severity they probably depend on irregular contraction, with retention of coagula in the uncontracted portion; while, in other cases, when retention of urine has been present, the uterus takes on pseudo-expulsive action. The internal hemorrhage met with in this case differs from that usually so designated. Thus there is sudden and severe pain, and faintness is very rare and rather due to prior exhaustion than to the loss of blood, which is much less than in ordinary hemorrhage. There is not the enlargement of the abdomen, and it has not the same firmness, except at the spots where the contraction exists, where, indeed, it is much firmer. Elsewhere it is soft and is not tumid. The flow is slight at first, and the blood coagulates as it takes place. It is forced down into a solid mass through the dilated os into the vagina, becoming firmer and firmer, until at last it gives rise to strong painful contractions, for the purpose of obtaining its expulsion. The diagnosis is still further aided by the perfect relief that follows the removal of the coagulum. In none of the cases has secondary hemorrhage, so common in ordinary hemorrhage, been met with; and there is here a feeling of safety which does not attach to ordinary cases.

Art. 119.—*On the treatment of Cracked Nipple.*

By M. Legroux, Physician to the Hôtel Dieu, Paris.

(*Gaz. Hebdom. de Méd. et Chir.*, Aug. 22, 1856.)

M. Legroux proposes to cover the affected nipple with an artificial epidermis, and he thinks that the "baudruche" will answer this purpose very conveniently. This "baudruche," first pricked with a few pin-holes to allow the milk to pass through, is drawn over the nipple, and then fixed to the skin of the breast by a varnish consisting of collodion, 30 grammes, castor oil, 50 centigrammes, and turpentine, 1 gramme 50 centigrammes. In applying this varnish, it is necessary to avoid the nipple itself, or much inconvenience and pain may be caused by the subsequent contraction of the drying film. When the infant is applied to the breast the "baudruche" is first made soft and supple by the application of a little sugar and water. With care one of these sacs may last for several days—until, in fact, the cracks may have healed.

ART. 120.—*On the differences in the composition of Milk at different times of the day.* By Professor BÖDEKER.

(*Zeitsch. für rat. Med.*, vol. vi, part 2, 1856.)

The very careful analyses of Dr. Bödeker lead to the following results:

1. The quantity of fatty matter increases continually from morning until evening, and in the evening it is nearly doubled. In sixteen ounces of milk drawn in the morning the infant received three eighths of an ounce of butter, while in the same quantity of milk drawn in the evening it received from five eighths to three fourths of an ounce of the same substance.

2. This augmentation in the quantity of fatty matter is accompanied by a trifling augmentation in the quantity of caseine. In sixteen ounces of milk drawn in the morning, there were three eighths of an ounce of dried caseine; and in the same quantity drawn in the evening, about nine twentieths of an ounce.

3. As the caseine increases in quantity the albumen diminishes, and almost in the same proportion.

4. The sugar of milk undergoes little variation. It is, however, somewhat more abundant in the morning than in the afternoon.

5. The quantity of the saline constituents of the milk remains constant.

ART. 121.—*On the effect of Belladonna in arresting the Secretion of Milk.* By Dr. GOOLDEN, Physician to St. Thomas's Hospital.

(*Lancet*, Aug. 9, 1856.)

The two cases here detailed are not sufficient to prove that belladonna will always be either successful or safe, but they render it highly probable that it will be so. Dr. Goolden writes:

"E. J—, æt. 28, was admitted into Anne's Ward, St. Thomas's Hospital, with severe rheumatic fever, and with a child at the breast four months old. She had been ill four days. At the time of her admission she had swelling and acute pain in both wrists, right elbow, both knees, and left ankle. The knee-joints were distended with synovia, and erythematous patches were on the skin of the knees, ankles, and wrists. She was bathed in perspiration, and the secretion of milk was abundant. According to the regulation of the hospital the child was removed; indeed, from her helpless condition, it was necessary, considering the difficulty of attending to an infant in a ward with other patients. Soon after her admission she took eight grains of calomel and a grain and a half of opium, followed by a senna draught; and one scruple of nitrate of potassa, ten grains of bicarbonate of potassa, and half a drachm of spirit of nitric ether, in peppermint water, every four hours. The joints were covered with cotton wool.

"On the following day, at two o'clock, I found she had been freely

purged; the joints were in nearly the same state. She had had no sleep. The breasts had become tumid, hard, painful, knotty, and extremely tender. The superficial veins were distended. Some milk had been drawn, but the process was attended with great pain, and we could not listen to the heart's sounds on account of the tenderness.

"A milk abscess, in complication with rheumatic fever, was of all things to be avoided, and unless the secretion could be at once arrested it appeared inevitable. In this strait I recollected that I had somewhere met with an observation (but I cannot remember whether it was in an English or foreign journal) that atropine applied externally to the breasts would dry up the milk; and thinking it reasonable, I caused the areola of the breasts to be smeared with extract of belladonna, in the same way that it is used to dilate the pupil of the eye. I likewise ordered the addition of half-drachm doses of colchicum wine, knowing that whenever milch cows eat the meadow saffron in the pasture, they immediately become dry; and though I have not much faith in colchicum as a remedy in rheumatic fever uncomplicated with gout, there could be no objection to its use, and it has the sanction of much higher authority than my own.

"On my third visit, the following day, the first inquiry was about the breasts. They were all right. But was it the colchicum or belladonna that had relieved them? The extract was used before I left the ward; before the mixture was given the secretion of milk had been arrested, and the breasts had become soft. The rest of the case has no further special interest. I will only state that there was no heart affection, and that the fever, though very severe while it lasted, was of short duration, and the patient left the hospital quite well, in fourteen days.

"The second case that occurred to me was uncomplicated with any disease, and such as would usually fall under the care of the accoucheur rather than the physician:

"A lady, the wife of a clergyman, was travelling with her husband, and in order to accompany him, had weaned her baby (then seven months old). Happening to be at Oxford at the commemoration festival, he came to me in great trouble, telling me that his wife had done a foolish thing in weaning the child, and that they were now arrested in their progress in consequence of the state of her breasts. They were tumid, very tender, painful, and hard, with large superficial veins, and the milk had been drawn with difficulty several times, with temporary relief. I recommended the application of the extract of belladonna to the areolæ, desiring them to send for a medical practitioner if the inconvenience did not immediately subside, or unless she felt quite well. A few days brought me a letter, giving a very satisfactory account, and thanking me for what she was pleased to call my wonderful prescription. Within two hours she was perfectly relieved, the milk absorbed, and (what is very important) there was no fever or other inconvenience attending the sudden suppression of the milk; and instead of taking the opening medicine I had prescribed for her, she continued her journey the next morning.

"I have not been able to discover that the fact that belladonna is available for the purpose of arresting the milk secretion is at all gene-

rally known—certainly it was not to several accoucheurs in large practice of whom I have inquired. The fact is important, if true, for then milk abscesses will become a matter of past history, and probably many diseases of the breast may be rendered less complicated by its use."

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 122.—*The Contagiousness of Puerperal Fever.* By Dr. CREDÉ.

(*Verhandl. der Ges. für Geb.*, 1855; and *Br. and For. Med.-Chir. Rev.*, April, 1856.)

"Dr. Credé, in a report on puerperal fever, confirms the conclusions arrived at in Vienna, as to the contagiousness of that disease. He relates that for nearly two years puerperal fever had raged with but little intermission in the Charité Hospital in Berlin. He refers to a statistical account by Dr. Quincke, to show that of about 650 women delivered there in the last year, 139 had been removed for illness to the inner station; all of these, with the exception of 15, were affected by puerperal fever, and 68 died. All the apartments used for the labour patients were twice changed, and once every utensil and all the attendants were changed. All had little or no influence. In the new room, as in the old, puerperal fever continued. Upon this, the physicians of the outer station made the observation that the contagion of hospital gangrene and of pyæmia, which also had not ceased within that time, was in close relationship with the puerperal fever contagion. It was therefore weighed by the committee whether it would not be desirable to remove the lying-in institution altogether from the Charité. Dr. Credé added, that it appeared manifest that wherever hospitals were connected with lying-in wards, puerperal fever contagion assumed far geater development and intensity, as in Vienna, Prague, Stuttgard."

ART. 123.—*On Phlebitis of the great venous trunks of the Neck subsequent to Labour.* By Dr. M'CLINTOCK, Master of the Lying-in Hospital, Dublin.

(*Dublin Quarterly Journal of Medical Science*, Aug., 1856.)

The two nearly related subjects—phlebitis and pyæmia—both still require close investigation, and offer for solution many important problems. Every new fact, therefore, in their history—every novel aspect under which either disease is seen—should be placed upon record for the purposes of future generalization. Accordingly, the following case is brought forward by Dr. M'Clintock, as presenting some features of peculiar interest:

CASE.—S. D—, æt. 22, was confined of her first child, a boy, on March 8th, after a labour of twenty-eight hours' duration. The consumption of time chiefly took place in the first stage, and in consequence of rigidity of the

os uteri. For several days previously to the setting in of true labour, she suffered much from spurious pains; and very considerable hemorrhage occurred immediately on the expulsion of the after-birth. From the time of delivery her pulse was remarked to be quick, above 100; and this rate of frequency did not subsequently diminish. During the ensuing week she remained in a very unsatisfactory state. She had no rigor, nor anything like a distinct accession of fever or inflammation; but the pulse was constantly 110, or upwards; the belly was tumid; the uterus large, and tender on deep pressure; and she was troubled with painful tenesmus, and frequent dysenteric stools. Nevertheless, she was cheerful, and made no complaint of uneasiness in any particular situation. On her ninth day there was an apparent improvement in every respect, the pulse falling to 96, the belly becoming soft, and bowels being moved only five or six times in the twenty-four hours. On her tenth day she drew our attention to a fulness and tenderness immediately above the inner end of the right clavicle. There was a slight tumefaction in this situation, such as might be caused by a simple glandular enlargement. About this time she began to complain of a short, irritating, dry cough, which used to annoy her in the evening, and for which no satisfactory cause could be discovered. A few days later a similar swelling appeared in the corresponding situation on the left side of the neck. She did not seem to experience any serious uneasiness from these tumours, and beyond fomenting them with warm water, and painting with tincture of iodine, no decisive treatment was employed. Some days later, namely, on the 22d of March, her fifteenth day, I detected the existence of considerable œdema at the root of the neck, and across the upper and anterior part of the chest, but more so at the left side. The diarrhœa still continued, though with greatly diminished severity; her pulse was usually about 108; and the abdomen was flaccid, and entirely free from pain or fulness.

On the 26th of March the œdematous swelling of her neck was decidedly less, though her face seemed somewhat puffy, and the tenderness still remained. As she was now eighteen days confined, and seemed better, we yielded to her own urgent request for leave to be dressed, and to lie on the outside of the bed. Before she was dressed, however, she got an indistinct rigor, and had to be put back into bed.

From this time forward her symptoms underwent a striking change; and she progressively became worse and worse. There was a marked exacerbation of all the febrile symptoms; with hurried respiration and occasional vomiting. In addition to these it was noticed, that the superficial veins, beneath the clavicles, and on the fore part of the chest, had manifestly become varicose.

From a careful review of her history, and an attentive consideration of her present symptoms, there seemed little room to doubt the existence of inflammation of some of the deep veins of the neck; and though not aware that such a diagnosis had ever been made, still we conceived that no other lesion could satisfactorily explain the peculiar features of her case.

On March 28th she is reported to have slept tolerably well; pulse 120; a deep flush on each cheek; the rest of the face is puffy, and of a chlorotic hue; the belly is soft and relaxed, and everywhere free from tenderness; the network of enlarged veins is still more apparent than heretofore, and includes some branches of the upper arm. The tongue is dry, and has a brown streak down the centre. Her breathing is somewhat oppressed; and she continues to have towards evening a short, teasing cough; this seems to be her chief source of discomfort; for, unless she moves her head, she experiences no pain in the neck. A slight rigor occurred to-day; in the evening it was remarked that her hearing was somewhat impaired. A rough bruit was detected with the first sound of the heart.

Her condition on the next day was, in every respect, more alarming; the pulse 128, and weak; tongue dry, brown, and crusted; slight subsultus of hands; frequent sickness of stomach; face much swollen; eyes prominent and pupils dilated; deafness increased towards evening; she complained of indistinctness of vision. Her mind continues clear and undisturbed.

On the 30th it was plain that her dissolution could not be far off. The respirations were frequent and laboured; the pulse scarcely countable, and very weak, though the heart was beating strongly; a thick brown crust on the tongue; pupils very much dilated. She was drowsy, and towards evening lapsed into a comatose state, which ended in death, at 9 p.m.

Autopsy, twelve hours after death.—The enlarged veins in the neck and chest still very distinct, though changed in colour. The abdomen, when laid open, presented no morbid appearance; the liver was healthy. The *uterus* was rather large for this period—twenty-two days—after delivery; its structure was remarkably soft and friable. Behind this organ, and deep in the pelvis, existed a small abscess. The mucous membrane of the large intestines seemed thickened, and was of a very dark colour, apparently from intense congestion. The *kidneys* were in an advanced stage of fatty degeneration. On dissecting back the integuments of the neck, and exposing the great venous trunks in this region, it was at once apparent that phlebitis, in its most marked form, had existed here. The deep jugulars, both subclavians, the upper part of each axillary, the right vena innominata, and superior portion of left, were the vessels engaged. In calibre they seemed enlarged, their coats were thickened, and internally they contained firm plugs of coagula and lymph, the latter being the more external, and adhering very closely to the wall of the vessel. These formations extended down to near the superior cava, the lining membrane of which was redder than natural. The pulmonary valves were intensely red, as was the interior of the pulmonary artery, contrasting strongly with the aorta, which presented its natural colour. In the right auricular appendix was a small incipient abscess. The tricuspid and mitral valves were intensely injected, so as to present a bright scarlet colour. The aortic valves contained some calcareous matter, but otherwise presented no abnormal appearance. The lining membrane of the heart itself was pale, and showed no traces of inflammation.*

"Such," proceeds Dr. M'Clintock, "is a very brief history of the symptoms and morbid appearances which this case presented. It will be remarked that, at an early period after parturition, the patient became affected with symptoms of low puerperal fever, the gastro-intestinal mucous membrane being the part on which the action of the poison seemed to be chiefly expended, though it is possible this diarrhœa may have had some connection with the renal disease. A variety of circumstances concurred in this case to favour the development of puerperal fever. The kidneys were far advanced in fatty degeneration; she had spurious pains for a considerable time before the setting-in of true parturient action; her labour was tedious (twenty-seven hours), and was followed by severe hemorrhage. Another circumstance there was in her case, yet more influential than all these together, in predisposing to the invasion of puerperal fever, she had been seduced, and was labouring under intense mental depression, from the conjoint influence of bitter disappointment, and the cheerless prospect of a life of irretrievable disgrace and shame.

* The preparation showing these morbid alterations is now in the museum of the Lying-in Hospital.

"The attack of puerperal fever seemed partially to yield to treatment; there was some mitigation in the local and general symptoms. In the middle of the second week, however, the first indication of phlebitis of the neck showed itself. Now, in most cases of crural phlebitis, we find the course of events to be much the same as that just described. Thus, of sixty cases of puerperal phlegmasia dolens, collected by Dr. Mackenzie, the attack followed upon some form of puerperal fever in thirty-three instances, and even this proportion I believe to be much under the mark.

"The local effects of phlebitis were present, for some days, without being attended with any remarkable constitutional symptoms; and I freely confess that no suspicion crossed my mind, at this period, of the real nature of this swelling in the neck. To this localised tumefaction œdema succeeded; then came a rigor, and after it a sudden explosion of alarming symptoms, which too plainly revealed that the very fountain of life itself was poisoned. At a later period the dilated condition of the superficial veins on the front of the chest attracted our attention, and first suggested the possible existence of phlebitis of the deep veins of the neck. But little reflection was required for this conjecture to settle down into absolute conviction; in fact, for the establishment of this diagnosis, no symptom was now wanting: there were local swelling and tenderness, œdema, unequivocal signs of venous obstruction, and the constitutional disturbance ordinarily attendant upon phlebitis. Mark, also, the sequence in which the symptoms appeared: first, puerperal fever, and apparently partial recovery; next, localised pain and tumefaction; then œdema; and, some days later, a rigor, with increased constitutional disturbance; and, lastly, varicose enlargement of the superficial veins.

"The condition in which the deep jugular veins were found after death, plainly showed that they had become wholly impervious, so that the return of blood from the head must have been entirely effected through the vertebral and superficial jugular veins. That great obstruction existed in the venous circulation, was manifest during the last few days of her life, and caused the aspect and expression of her face to bear a very close resemblance to those cases in which heart-disease, and enlargement of the thyroid gland, co-exist. I regret exceedingly that an examination of the head could not be obtained.

"The subclavian vein on each side was more or less obstructed by firm coagula and lymph; yet there was no œdema on either band or either arm. It is, perhaps, impossible to say, with certainty, in what particular spot the phlebitis began, or in what direction it spread; that is, whether in a direction towards or from the heart. My own opinion is, that it extended along the veins *contrary* to the course of the circulation, as is generally observed in crural phlebitis. This opinion is founded on observation of the situation of the tumour during life, and of the morbid appearances in the veins, the apparently more recent inflammatory deposits being at the remote point from the heart.

"The existence of fatty degeneration of the kidneys is a feature in this case that should not be overlooked, particularly at the present

time, when so much attention is being directed to the influence which this organic lesion exercises over the progress and results of intercurrent diseases. The urine was not at any time tested, as, owing to the constant presence of diarrhœa, it was not procured free from the admixture of fæcal matter.

"I believe it will not be an exaggeration to assert, that the case just detailed, in so far as relates to the phlebitis of the venæ innominatæ, is almost unique in medical literature. I know of but one similar instance; it was exhibited at the Pathological Society, in November, 1851, by Dr. Mayne, and the account of it is published in the thirteenth volume of the 'Dublin Quarterly Journal,' new series."

Art. 124.—*On the Cramps of Nurses.* By M. Verdier.

(*Bull. de Thér.*, tom. l, p. 201.)

In this communication M. Verdier directs attention to the cramps which occasionally occur in enfeebled and ill-fed nurses. These cramps occur more frequently in the upper extremities than in the lower, and occasionally they are confined to the muscles of the neck. The pain is often very severe and continued. Most generally the cramps were accompanied by evidence of scrofula or hysteria. Weaning, an improved diet, with opium and ether for the pain, were the remedies.

Art. 125.—*On the treatment of Milk Abscess.* By Dr. James Gilmour.

(*Lancet*, June 7, 1856.)

After some prefatory remarks, Dr. Gilmour says, "I beg to reintroduce to the notice of the medical profession the treatment of milk abscess by *compression*, as advocated by Trousseau and Contour; the compression being made with very long strips of adhesive plaster. I give their own words: 'The compression is to be accomplished by strips of plaster, broad, and sufficiently long to go several times round the body. The surgeon, standing by the side of the patient, must first fix one of the extremities of the slip at about the middle of the back; then carry it towards the side of the chest; then pass it over the breast, beginning from the lowest part; then obliquely from below upwards to the outer third of the clavicle on the healthy side; and then obliquely downwards across the back, so as to cover the extremity of the slip already fixed. Following this course several times, he must take care that the portion of the band applied each time covers the two upper thirds of the preceding turn. But it is easy to see that if the bandage is always carried in the same direction, the breast cannot be completely covered; and that, on the other hand, as its several turns go across the clavicle of the healthy side, the movements of the shoulders would tend to displace it, and the lower part of the breast might soon be uncovered. Other strips of plaster are therefore applied, which, proceeding from the anterior and upper part

of the abdomen, ascend, crossing the first obliquely; then pass under the axilla, and return, after passing over the posterior part of the chest to the part where they were first applied, and then are carried again along the same track, covering each time the two upper thirds of the strip last applied. The breast is thus completely covered by the bandage, which is prevented from rising by this last described, which ought to cover only the upper part of the breast.'

"And what advantages did the authors attribute to this plan? They found that it immediately relieved pain, and diminished the inflammatory engorgement. When applied, after the abscess was opened, it favoured the evacuation of matter and shortened the suppurative period. I have considerably modified Trousseau's method in my practice: I use bands of plaster about 14 inches long and 1 inch broad; occasionally they may be required rather longer. The extremities of the strips are attached to the ribs behind, pass over the tumefied mamma, and fastened on or about the sternum: whilst a second set pass from the anterior part of the abdomen to the clavicle, covering the first layer, and *vice versâ*. I am satisfied this answers as well as the longer bands, the amount of compression is nearly as great, and the benefits very satisfactory, as will be seen by the recital of only three cases selected from a large number."

Case 1.—Mrs. H—, æt. 27, confined May 4th, 1854, of her first child; breech presented; still-born. Forty-eight hours afterwards, and when the breasts were tumefied and painful, the adhesive strapping was applied, as above described, *the nipple being entirely covered.* Saline aperients were freely administered. On the second day after compression, the breasts felt full, and attended with considerable pain. She says that the strapping slightly interferes with her breathing, but objects to have it taken off. Next day feels more comfortable; the swelling and tension gradually subsided until the plaster became loose, when it was removed. She was quite well in ten days.

Case 2.—Mrs. E—, æt. 29, confined June 4th, 1855, of her second child, which was very delicate and strumous. She had witnessed the good effect of the strapping in case 1; she also told me that at her first confinement both the breasts suppurated, and did not heal until after two months of great suffering. Two days after delivery I applied the strapping, but *the nipples were not covered.* The lacteal secretion was not entirely suppressed; the baby sucked at regular intervals; and when I considered the breasts sufficiently prepared for a larger flow of milk to enter, I removed the plaster, and she also was well in ten days. However, three weeks afterwards, from exposure to cold, the left mamma became swollen and painful; a hard tumour formed in the superior part of the organ, next the clavicle. The compression was again applied for four days, and removed; the swelling had disappeared. Saline purgatives were taken during both periods of compression. Since that time she has had no return of any inflammatory engorgement.

Case 3.—Mrs. S—, æt. 24, delivered on December 2d, 1855, of a strong healthy infant, a *primapara.* On the third day afterwards, when the breasts were very full and painful, owing to the baby refusing the nipple, which was small and flattened, the strapping was applied in the usual manner, *leaving the nipples uncovered.* The lacteal secretion was abundant, and ran from the nipples. She says she has had no pain since the compression was commenced. One week afterwards she removed the strapping, owing to its getting loose, and she continued quite well. Aperients were given as usual.

"In cases where the plaster was applied too late to prevent suppuration, I was astonished at the relief afforded from pain, tension, and throbbing, though the abscess gradually proceeds to complete maturation. After suppuration has taken place, and the abscess having naturally burst before the surgeon had been called in, the greatest benefit will be found from the application of this mode of compression; and amongst the many advantages arising from the strapping, not the least important is the prevention of the pyogenic action from extending through the lax tissue of the organ.

"Again, when suppuration has gone on unchecked, and after one or more sinuses have formed, marked benefit will be derived from this mode of compression. In such cases great attention and perseverance are requisite, because the plaster will have to be repeatedly changed, for it becomes loose, as the chronic engorgement and tissue infiltration disappear. I prefer the preliminary trial of this method in sinuous abscess to others recommended—to laying open the sinuses, at first practised by Hey, and still followed by others; or to the injection of the sinuses with iodine, as pursued by Mr. Birkett at Guy's Hospital. At the same time that local strapping is employed in these cases, we must resort to constitutional treatment by tonics and alteratives, for the system is generally weakened and debilitated, owing to the continual drain kept up from the sinuses. Hectic may exist; many women are greatly emaciated, so much so that Ramsbotham states that 'the body has been known to dwindle almost to a shadow.' I have a patient under my care at present, aged 23, with sinuses in one breast, of six weeks' duration, who presents all the appearances of a person far advanced in phthisis. If the compression be employed in these cases without a generous diet, fresh air, and tonic medicines, we shall assuredly fail in causing the sinuses to heal up; but when all are conjoined, the improvement of the patient is gradually manifested."

ART. 126.—*Glycerine and Tannin in Vaginitis.* By M. DEMARQUAY.

(*Bull. de Thérap.*, t. l, p. 541; and *Méd. Chir. Rév.*, Oct., p. 549.)

In the treatment of this affection, M. Demarquay has found a composition, consisting of eighty parts of glycerine and twenty of tannin, of great service. When the vaginitis first appears, the inflammatory symptoms should be calmed by appropriate regimen, baths, and frequent emollient injections. When the first stage of the inflammation has passed away, and the careful introduction of the speculum has become possible, abundant injections of water are to be thrown in, so as to remove all the muco-pus which lines the walls of the vagina, and these are then dried by a plug of charpie placed at the end of a long forceps. Then, three plugs of wadding, well soaked in glycerine and tannin, are to be introduced. Next day, after a bath, the plugs are removed, new injections made, and the dressing repeated. M. Demarquay has never had to have recourse to more than four or five such dressings. After discontinuing them, astringent injections, con-

sisting of infusion of walnut leaves, in which one drachm of alum to the quart has been dissolved, are employed two or three times a-day for a week or ten days.

Art. 127.—*On some of the injurious effects of Prolapsus Uteri.* By Professor A. Retzius, of Stockholm.

(*Anatomiska iakttagelser;* and *Edinburgh Medical Journal*, July, 1856.)

On a previous occasion, a case was communicated by Professor Düben, where, in an individual suffering from prolapsus uteri, one of the kidneys was found atrophied, with dilatation of its pelvis and ureter, in consequence of pressure by the tumefied lower portion of the uterus. Shortly afterwards, Professor Retzius had an opportunity, in the anatomical rooms, of examining a subject affected with an extensive prolapsus. He found here both kidneys atrophied, forming, as it were, thin caps over the greatly dilated pelves; the calyces and the papillæ renales being obliterated. The ureters were also dilated, and lengthened to more than twice the normal dimension. They lay flattened, of the breadth of half an inch, and presented many windings. The urinary bladder was also remarkably large, and in its lower part considerably thickened. The place where the ureters enter into the posterior wall of the bladder was pushed down into the lower opening of the pelvis. The under portion of the bladder lay thrust forward, between the arch of the pubis and the prolapsed and swollen uterus. The urethra, which in its natural condition has a straight direction between the vagina and the arch of the pubis, through the fascia profunda of the pelvis, was here compressed towards the arch, by the prolapsus, and had a greatly bent course upwards, around and beneath the arch, almost in the form of a loop. The canal was at the same time widened and lengthened; and from its orifice depended a flat, lancet-shaped flap, a prolongation of the mucous membrane.

It is obvious that the prolapsus had proved here a source of pressure, as well posteriorly on the corpus trigonum, into which the ureters open, as towards the arch of the pubis, and upon the prolonged and thickened neck of the bladder itself. Hence ensued an obstruction of the flow of the urine, which had evidently, as the case of Professor Düben had already demonstrated, led to the atrophy of the kidneys, and to the lengthening and distension of the urinary passages; which again, in their turn, must have conduced to a deleterious influence upon the condition of the blood, and upon the whole organism.

Art. 128.—*Inversion of the Uterus replaced on the third day.* By Dr. Isaac G. Porter.

(*American Journal of Med. Science*, July, 1856.)

The point especially inviting attention, in the following case, is the length of time that elapsed before the replacement of the inverted uterus.

Case.—A lady, 30 years of age, of delicate organization, though of uni-

formly good health, was confined in the country, at 4 o'clock a.m. Tuesday, March 18th, under the care of a neighbouring practitioner. The labour was not severe, lasting but little over four hours, but the delivery of the placenta was delayed one or two hours, doubtless owing to atony of the uterus. It came away somewhat disrupted, although the physician disclaimed having used any undue interference. Previous, and subsequent to its delivery, there was much flooding, attended with great faintness, prostration, nausea, &c. Some hours after, she partly arose in bed to urinate, when the uterus made a complete descent, through the external parts, forming a tumour the size of "two fists." Increased prostration, and much alarm and distress followed the shock which the system sustained from the abnormal displacement and the downward pressure of the contents of the abdomen, as well as from an entire inability to pass water. This function was not performed after the accident, until the reinversion of the uterus, except as the mass was crowded upwards by manual assistance, thus relieving the pressure on the urethra; and on my arrival, I found the protruded body partially returned, within the vagina, where it was supported by a pessary, or tampon, resting externally on the bed. The physician and patient both informed me, that great relief followed this partial reposition, she being enabled thereby to pass water, yet with difficulty, while, by the same means, the traction of the uterus on its ligaments, was considerably lessened.

The patient resided about twenty miles distant, and I did not see her until Thursday eve, at 8 o'clock, almost three days after the accident. The foregoing account I received from the physician in attendance. At this time moderate reaction had come on; countenance anxious and deadly pale; pulse 120, and irritable. There was much distress and tenderness in the abdomen, flooding not severe, since the complete inversion, and immediate danger to life did not appear imminent. An examination confirmed the suspicion of inversion. The vagina was filled with a firm, yet compressible, globular, and sensitive mass, answering the usual description of books—no os tincæ was discovered, but there was a marked fold of the vagina encircling the tumour, which is mentioned in this place as being confirmatory of the opinion that this constitutes a valuable diagnostic between inversion of the uterus and polypus. Gentle but gradually increasing force with the back of the flexed fingers caused the mass to diminish in size, and slowly to ascend in the direction of the superior strait. As it grew less in dimensions it was more easily grasped, and ultimately, the uterus, with the hand encircling and compressing it, was used as a *stem*, with which upward pressure was exerted. Under this compound action of compression and elevation, the restoration became much more rapid. Owing to the extensibility of the soft parts, considerable counter-pressure on the abdomen became necessary. The sensation communicated to the hand was very different, when the parts were returned as far as the os tincæ and the uterus, in which latter the regular process of involution had evidently commenced. There was less resiliency in the uterus at the last stage of the operation than is common immediately after delivery—but rather a spontaneous yielding to a slight force, with one or two fingers; these were retained in the cavity for some minutes after the completion of the operation, which occupied about twenty-five minutes. Immediate relief followed, the uterus resumed its place in the hypogastrium, and the abdomen became much less tender on pressure. Under the influence of a stimulant, and an opiate, the patient enjoyed her first sleep since her confinement. The horizontal position for a week was strictly observed, and there being incontinence of urine for a few days, the catheter was uncalled for. Some febrile excitement existed in the form of thirst, frequent pulse, and much pain in the

back. The lochia was sparing, and the secretion of milk never occurred. The countenance was blanched and leucophlegmatic, and there was anæmic headache.

On the thirteenth day, while attempting to sit in a chair for the first time, a severe pain in her right leg and hip seized her, which was the commencement of a mild attack of phlegmasia dolens. For two days the pain was extreme, as was the tenderness in the tract of the femoral vessels. The case, however, speedily yielded, verifying the principle, that the later the attack after parturition, the more amenable to remedies.

Art. 129.—*On the surgical treatment of Uterine Polypi.* By Dr. Spaeth.

(*Zeitsch. f. pract. Heilkunde*, June 6, 1856.)

How is it that there are such discrepancies in the experience of surgeons with respect to the ligature and knife? How is it that the ligature has succeeded so admirably in some hands, and failed so completely in the hands of others? The explanation, M. Spaeth thinks, is to be found, not in the operator, but in the circumstances under which the operation is undertaken. M. Spaeth is of opinion that *the operation ought to be deferred until the polypus is liberated from the neck of the uterus*, unless there are some special reasons to the contrary; and he says that it is of little moment how we operate, if the operation be thus deferred.

Art. 130.—*On Carbonic Acid as a local anæsthetic in uterine diseases, &c.* By (1) Professor Simpson, and (2) Dr. Wm. Williamson.

1 (*Edinburgh Medical Journal*, July, 1856.)
2. (*Ibid.*, Aug., 1856.)

1. At a recent meeting of the Obstetrical Society of Edinburgh, Dr. Simpson said that he had used carbonic acid successfully as a local anæsthetic, in neuralgia of the vagina and uterus, and in various morbid states and displacements of the pelvic organs accompanied with pain and spasms. He had found it also sometimes of use in irritable states of the neighbouring organs. Two years ago he had under his care from Canada, the wife of a medical gentleman, who was suffering much from that most distressing disease—dysuria and irritability of the bladder. Many modes of treatment had been tried in vain. The injection of carbonic acid gas into the vaginal canal several times a day at once produced relief, and ultimately effected a perfect cure. She has remained well since her return to America, and lately became a mother. Occasionally, relief follows immediately. In two or three instances, he stated he had seen the use of the gas continued daily for months, and that he had notes of one case where the patient was invalided, and almost entirely kept to the supine posture for years, from feelings of pain and bearing down in the uterus and neighbouring parts, particularly on attempting to sit or walk. Many modes of treatment were tried by himself and others, with little or no

benefit. She has, however, at last regained in a great measure the power of progression, and freedom from suffering in the erect posture —a result which she herself ascribes to the local application of carbonic acid gas.

In practice, he generally used a common wine-bottle for the formation of the carbonic acid gas, and formed the gas by mixing in the bottle six drachms of crystallized tartaric acid with a solution of eight drachms of bicarbonate of soda, in six or seven ounces of water. A long flexible caoutchouc tube conducts the gas from the bottle into the vagina. The cork fixing this tube into the mouth of the bottle should be adapted so as to prevent any escape of the gas by its sides. With this view, the cork should be perforated by a metallic tube, and covered externally with a layer of caoutchouc. In a case in which the two preceding children were both lost, he had successfully brought on premature labour at the eighth month, by the repeated application of carbonic acid gas to the vaginal canal with this apparatus—the carbonic acid not acting directly as a specific oxytocic or excitor of uterine contraction, but indirectly only by distending greatly and mechanically (as examination with the finger proved it to do) the vaginal canal, and ultimately separating, like the injection of water the membranes from the cervix uteri.

The application of carbonic acid as a local anæsthetic to the uterine mucous surfaces and to other parts of the body is not a discovery of late times. He had found that in this, as in many other examples, that what appeared at first novel, was, when fully investigated, a practice known previously in its essence, and perhaps in its more minute details also. Besides here, as elsewhere, when once a principle is detected, such as the anæsthetic power of carbonic acid gas when applied topically, we can explain by it the good effects of modes of practice which, previously perhaps, we were inclined to ridicule and reject. The fact that carbonic acid, when locally applied to a mucous surface, acts as a sedative or anæsthetic, explains a practice common among the ancients, viz., Hippocrates, Paulus Ægineta, Rueff, Paré, &c., all of whom used to burn herbs, aromatic and medicinal, and convey the fumes by means of tubes and appropriate apparatus to the interior of the vagina; and such vapour being loaded with carbonic acid, it is more than probable that if such treatment was effectual, it was through the anæsthetic properties of the gas here alluded to. Again, there is a modern practice much in vogue on the Continent, of injecting the vagina, &c., with the German waters of Nuheim, Marienbad, &c.; the utility of the practice, which Dr. Simpson has been assured by his friend, Dr. Funck of Frankfort, is most marked in some diseased states, will find its true explanation in the local anæsthetic effect of carbonic acid, as these waters contain a large quantity of the gas. A knowledge of the topical effects of carbonic acid serves, perhaps, also to afford an explanation of other points in common therapeutics; as, for example, its action in subduing gastric and intestinal irritation. Hence the use of effervescing draughts, aerated waters, &c., in gastric irritability and nausea; perhaps the antacid action of the alkali may have some effect, but most likely it is the anæsthetic properties of the carbonic acid gas. The sedative and curative effects of injections

into the rectum of carbonic acid gas in dysentery have a similar explanation, and serve to corroborate this view of its action. As an example of its use as a local anæsthetic to a cutaneous surface, Dr. Simpson alluded to the *cataplasma cerevisiæ*, or yeast poultice, which exhales from its surface a quantity of the gas. It was commonly applied to irritable and sloughing sores, and its soothing, healing, and antiseptic properties were doubtless owing to the carbonic acid gas. As an anæsthetic application to cancerous ulcers, the effects of carbonic acid gas are excellent. Dr. Ewart of Bath, says, "he has kept a person in ease and comfort, who, for so great a length of time before, had known only agony and torture." "What," he elsewhere observes, "strikes us in the two preceding cases with the greatest astonishment, is the *almost instantaneous relief of pain*, which *never failed to follow the application of the gas*." In reference to the effects of carbonic acid upon raw surfaces and wounds, Dr. Ingenhouz mentioned to Beddoes the following experiment: "Blister your finger, so as to lay bare the naked and sensible skin. The contact of air will produce pain; put your finger into vital air (oxygene), and this will produce more pain; introduce it into fixed or azotic air (carbonic acid or nitrogen), and the pain will diminish or cease." In relation to this statement, Dr. Beddoes informs us that he made the following experiments on three different persons: First. The raised epidermis of a blistered finger, after all action from the cantharides had ceased, was cut away in carbonic acid gas. No pain was felt. Secondly. A second blister being opened in common air, smarting pain came on. In a bladder of fixed air, this pain soon went off. Thirdly. After opening a third blister, the finger was instantly plunged into oxygene. It felt as when salt is sprinkled on a cut. In carbonic acid gas, the pain in two minutes quite subsided; but returned when the denuded skin was again exposed to the atmosphere. If there be no source of fallacy in these experiments, they certainly point to one kind of improvement in the treatment of some painful burns, wounds, &c. For they appear to suggest the possibility of the suffering which is attendant on such injuries being controlled and cancelled by keeping the pained parts in contact with carbonic acid, or with some other gas or fluid, capable of acting as a local anæsthetic. If the reports of Ewart, Beddoes, and Fourcroy are correct, we ought also, indeed, to find carbonic acid an excellent application even as far as the mere healing and cicatrization of the broken surfaces are concerned.

2. Dr. Williamson confirms the previous statement of Dr. Simpson. He believes, moreover, that carbonic acid acts peculiarly and specifically upon the organs of generation as a sedative and stimulant. Dr. Williamson also gives some interesting particulars about the "gas-bath" of Marienbad.

"In 1845," he says, "I spent some time in Marienbad, where carbonic acid, in various forms, plays a very important part among the curative agents in use there; and when I had an opportunity of becoming acquainted with its various therapeutic applications, and, in particular, with its use in the form of bath, under the name of '*the Gas Bath*,' which was at this time in great repute throughout Germany; and to these I shall confine the following remarks.

"The 'Guide Books' abound with accounts of its therapeutic properties, many of which my friend, Dr. Hirzig, resident practitioner there, corroborated, with other additional details, particularly of its use in uterine affections, which induced me to follow up the subject more fully.

"The carbonic acid employed there has a small admixture of sulphuretted hydrogen, sufficient to render it very disagreeable to the sense of smell, and to injure the polish of your gold watch or pencil-case (should you expose them to its influence, which I was thoughtless enough to do), but which is not believed to exert any therapeutic effect, that being entirely owing to the carbonic acid.

"The gas is obtained from the surface of an extensive natural mud deposit, which abounds in the neighbourhood of the establishment. This is constantly boiling and bubbling forth immense volumes of this gas from its miry depths, and a portion of it is covered by a large funnel, which collects and confines the gas as it rises, and which is thence conveyed by a tube into the bath compartment.

"This compartment is barrel-shaped, and provided with a seat, and a lid or cover, which fits closely around the neck of the patient, whose trunk and extremities are thus alone exposed to the vapour, which rushes with great force into the compartment against his person, but without being in any way directed to any particular part thereof. While undergoing the operation, therefore, the patient is immersed in a powerful current of the gas, which plays freely over his whole trunk and extremities.

"The therapeutic influence, however, is said to be confined to the pelvic viscera, or more particularly to the organs of generation; and the bath has an extensive reputation for the cure of diseases seated in those parts, and in particular, for the removal of certain kinds of sterility, of which many interesting, though perhaps fabulous instances, are related in the ephemeral publications which abound at all such establishments. Much of this must, no doubt, be put down to the spirit of exaggeration too frequently indulged in by the interested writers of those local Guides and Hand-books; although I have reason to belive, that in this instance they contain a certain amount of truth and fact.

"I was, of course, rather sceptical as to its powers of removing sterility, as well as to the more specific effects it was said to exert upon the generative organs in particular, and resolved to put the matter to some simple test; for I was told that its physiological effects even, were marked and palpable to the senses, and of which I could easily persuade myself by experiment. Still, knowing how apt peculiar sensations, and even vascular changes, are to be set up in the human organism, and particularly in these organs, through the medium of suggestion, or by concentrating the attention on them for a given time, I was careful to prevent this source of error, and arrrnged that two young men of our party, who were entirely ignorant of the reputed effects of the bath, should subject themselves to its influence, requesting them to attend carefully to any peculiar sensations or effects it might produce on them.

"After remaining in the bath about fifteen minutes, they described

their sensations to be almost identical, viz., that a prickling heat extended over the genital organs, followed by free perspiration and moist exudation from the mucous surfaces. Finding such result from this simple experiment, I was quite prepared to believe that very important therapeutic effects might be obtained by properly guiding and directing the application of this agent in many cases of uterine disease, as well as of many other diseases affecting the organs of generation."

ART. 131.—*A very large Ovarian Tumour.* By Dr. GEO. D. GIBB.

(*Trans. of the Pathological Soc. of London*, vol. vii.)

This tumour is probably the largest ever removed entire from the dead body, its weight being no less than 106 pounds. It was obtained from a young unmarried woman, æt. 31, and, so far as could be ascertained, it had occupied about seven years in its growth. As might be expected from its extreme size, the displacement of the viscera was very remarkable, the stomach and the greater part of the bowels occupying the position of the left lung, which was completely shrunk and carnified, the cervix uteri and vagina being remarkably elongated, &c. The tumour itself was composed of simple fibro-cellular tissue, with some cysts—a large one, containing forty-four pints of homogeneous puriform fluid, and several minute ones, containing a yellowish-red, serous-looking fluid,—but none of these cysts appeared to be proliferous.

ART. 132.—*Vesical Calculus in the Female removed by a new method of Dilatation.* By Dr. R. T. CORBETT, Surgeon to the Royal Glasgow Infirmary.

(*Glasgow Med. Journal*, Oct., 1856.)

"Mrs. M'K—, æt. 42, admitted June 25th, 1856, into the Glasgow Royal Infirmary, under my care. About ten months ago patient gave birth to a still-born child. About a week afterwards the desire to evacuate the contents of the bladder became very frequent, sudden, irresistible, and attended with considerable pain, which was rather increased when the urine had been expelled. Mere change of position frequently induced the desire, and sometimes, when the urine was passing in full stream, the flow would suddenly stop, to begin again when the posture was changed. On admission the above symptoms continued.

"On passing a sound into the bladder, a stone was readily detected. There was considerable mucous deposit in the urine, and the sleep was much disturbed.

"June 27th.—The patient having been put under the influence of chloroform, a fine specimen of the common 'fusible calculus,' measuring fully one inch and an eighth in length by one inch in breadth, was extracted by means of the following simple apparatus. A piece of vulcanized india-rubber tubing, half an inch in diameter and six inches in length, was tied at the one end to a metallic rod fourteen inches

long, slightly bent, and the size of a No. 10 sound. The elastic tube was then stretched along the rod, till the four inches of its extremity were scarcely thicker than the rod itself; and having been oiled, the apparatus was introduced into the bladder for three or four inches, and the tubing allowed to contract itself, which readily took place, when the hand that held it extended was gradually relaxed. By this means, general and equable dilatation was in two or three minutes accomplished to the extent of the diameter of the tube, and the instrument was allowed to remain for a few minutes longer, when it was withdrawn, and the forefinger of my left hand, previously oiled, introduced into the bladder, which was easily done, and the stone brought to its neck, from which it was readily extracted by a small pair of lithotomy forceps. The calculus was unusually rough, weighed 166 grains, and a section of it presented a uniform appearance. An analysis of it by Dr. Penny gave the following as its composition: 'A mixture of the phosphate of ammonia and magnesia, or triple phosphate, and bone-phosphate of lime; also a small quantity of lithic acid, with a little animal matter.'

"The patient was ordered an anodyne draught at bed-time. The report next morning was, that she had slept well and suffered no pain. She could now retain her urine for two hours, whereas, before the operation, she could only retain it for five or ten minutes. On account of the mucous discharge from the bladder, which continued, but in a slighter degree than before the operation, I ordered the following:

℞ Pulv. Uvæ Ursi, gr. xii, ter in die, ex Cyatho Aquæ.
Tinct. Hyoscyami, ℥j;
Aquæ Menth. Pip., ℥ss. Misce.
Fiat haustus, hora somni sumendus.

"From this date till her dismissal, about the 25th of July, she continued to improve, never having had the slightest incontinence of urine.

"It will be remarked, that upon this occasion I used half-inch tubing; but in any case in which I expected to find as large a stone, I should now employ three quarter inch, take more time to dilate, and allow the instrument to remain a little longer in the bladder, when, having withdrawn the apparatus, I should proceed as already described.

"The above is the description of my original instrument, the construction of which was the work of a few minutes; but I expect soon to have an opportunity of testing a more perfect apparatus, adapted for the removal of all the varieties of stone that are likely to be met with in female bladder—an instrument which, when introduced, will permit small stones to be removed through its cylinder by means of long slender forceps, and also the fragments of very large stones, previously broken down by a pair of cutting pliers carried into the bladder in the same way as the forceps. From the success which attended this case, I should feel disposed, in all instances of vesical calculus in the female, to remove the source of irritation, by dilatation, by lithotripsy, or by both, in preference to lithotomy; and this I

fondly hope will not only be practicable, but easily accomplished by the method just described, and that without the drawback of incontinence of urine, which hitherto has too often followed the best performed cutting operations.

"Dr. South, in his translation of Chelius's System of Surgery, observes, in a note:

"'In all the previously described operations (*i. e.*, lithotomy in the female), incontinence of urine is a very troublesome consequence, and often incurable. Astley Cooper, indeed, says: In all cases of this operation which I have performed or witnessed, the urine has not been afterwards retained; but I would not deny that a patient might recover the retentive power. As the loss of retention is a greater evil than I can describe, producing excoriation and a very offensive state, I shall, in any future operation for lithotomy, try what may be effected by employing a suture to bring the divided parts together.' Brodie's operation seems to have been partially successful; but Liston seems to think that his mode causes only a temporary incontinence. Most surgeons, however, are, I believe sadly perplexed with this tiresome result; and the patient necessarily still more so. Very recently I have seen a woman who was cut with the gorget about twenty years ago. She cannot retain her water at all; but it is constantly dribbling away, and she is in a very pitiable condition.'

"I differ from the opinion commonly entertained, viz., that incontinence of urine is more likely to follow rapid than slow dilatation of the urethra. I believe the converse will be proved to be true, and I think that in those cases which have turned out so unfortunate, a more general and equable dilatation, performed by the means I have mentioned, and whilst the patients were under the influence of chloroform, would have been followed by opposite results; and dilatation may be made as rapid as can be wished, provided always care be taken not to destroy the muscular structure of the part, which could only follow if the tubing was allowed to contract itself with great celerity.

"This dilating agent may be made available for many similar purposes, which will at once suggest themselves to the mind of the reader; such as stricture of the rectum and œsophagus, for dilatation of the os uteri, and the prepuce in phymosis, &c.

"With regard to the other methods of dilating the urethra, such as by the use of prepared sponge and by metallic instruments, I consider them very objectionable."

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 133.—*On the good effects of Pepsine in the diarrhœa of young Infants.* By M. CORVISART.

(*Révue Medico-Chir. de Paris*, Dec., 1856,)

In this communication M. Corvisart relates two cases of diarrhœa depending upon the presence of undigested food—the *diarrhœa stomacalis* of Hoffmann, the *diarrhœa ac ventriculo et cibis corruptis* of

Sennert—in which the administration of pepsine was productive of the highest benefit.

Case 1.—M. X—, æt. 4, was admitted into the Hospital of Ste. Eugénie on the 23d of November, 1854, under the care of M. Barthez. For many months this child had suffered from frequent diarrhœa, until it was emaciated and debilitated to the last degree. The appetite was voracious, and the stools contained much undigested food. In the first instance, M. Barthez tried the effect of a properly adjusted diet, with small doses of the trisnitrate of bismuth, but without avail. He then tried the pepsine, giving a "demi-paquet" (the quantity is not stated), at the commencement of a meal composed of the ordinary food of the hospital. On the following day (the 1st of December) the stools were of a better colour, and in other respects more natural than they had been before; and, encouraged with this result, the same quantity of pepsine was ordered to be given before each meal.

December 3d.—No stool. This was the first day without a motion for many months.

4th.—Still no stool. The pepsine discontinued.

5th.—Two somewhat fluid motions, although there was no change in the diet. There was, however, no undigested matter in the motions. The child was much better in every respect.

Three weeks afterwards, the child was discharged cured. M. Barthez, however, did not return to the pepsine, but contented himself with small doses of the trisnitrate of bismuth.

This case led M. Corvisart to try the effects of this remedy in the diarrhœa of very young children.

Case 2.—Alexandrine Lang, born on the 2d of August, 1855, was seized, on the 25th of October, with diarrhœa, after a very obstinate attack of erythema and eczema. This diarrhœa was accompanied with frequent hiccup and vomiting. On the 3d of November, fifty centigrammes of pepsine were given night and morning. On the 4th, the same treatment was continued; and now the vomiting and purging have disappeared, the stools have become natural, and the child takes the breast with avidity. The pepsine discontinued.

November 22d.—The vomiting and purging having returned, M. Corvisart has again had recourse to the pepsine.

23d.—The vomiting and purging have ceased, and the stools are natural. From this time the little patient went on well.

M. Corvisart adds, that many cases of the kind have fallen under his notice, and that the acidified form of pepsine, which he himself tried, was quite as efficacious in these cases as the neutral form proved to be in the hands of M. Barthez.

Art. 134.—*On the treatment of Eczema Infantile.* By Mr. Erasmus Wilson.

(*Assoc. Med. Journ.*, July 31, 1856.)

After an excellent account of the disease itself, Mr. Wilson thus writes upon the subject of treatment:

"In the treatment of eczema infantile, the three great principles which I have on every occasion advocated as the *law of treatment* of cutaneous disease, namely, *elimination*, *restoration of power*, and *alleviation of local distress*, are to be put in force, but with a change in

their order. Elimination must always go first; but in eczema infantile, I would place alleviation of local distress second; and restoration of power third. Thus the principles of treatment, the indications for treatment being settled, let us consider the means.

For *elimination*, the remedy is calomel or grey powder: I prefer the former; one grain of calomel rubbed down with one grain of white sugar, or sugar of milk, is the dose for the youngest infant; for a child a year old, a grain and a half; for a child two years old, two grains. Of course this dose is modified according to the apparent strength of the child in the first instance, and in accordance with the action of the medicine in the second; the object to be attained being such a dose as will produce an efficient relief to the alimentary canal, and moreover such an amount of relief as shall act as a diversion to the morbid secreting action taking place in the skin—in other words, as shall divert the morbid secretions of the skin into their more natural and proper channel, the alimentary canal. For this purpose, calomel excels every other medicine; from its small bulk it is convenient for exhibition, merely requiring to be dropped into the child's mouth. It stimulates the liver to an increased flow of bile, and in children it always acts most kindly on the alimentary canal. Again, a free action of the alimentary canal being secured, all probability of *repulsion* of the eruption by the remedies required for the second indication is at an end, and the mother's and nurse's alarms lest the disease should be *driven in* are set at rest. A free clearance of the stomach and bowels is therefore a primary, a necessary step, at the very commencement of the treatment. After the first dose, the calomel may be repeated according to circumstances; once a week, twice a week, every other night for a few times, even every night for two or three nights if it be absolutely necessary. In my own practice, I usually find once a week sufficient; and I am guided to the repetition of the dose by the state of the little patient. If there be any feverishness, fractiousness, irritability of temper, any increase of pruritus, inaction of the bowels, morbid secretion of the bowels, or threatened congestion of the mucous membrane of the air-tubes, then the calomel powder is to be administered at once without hesitation and without delay. The mother or nurse soon learns the moment for a powder, and, whatever prejudices they may have to the *name* of calomel, they are always ready to resort to it after they have once seen its action in this disease. As I have already said, I have no objection to the mercury with chalk, beyond the fact of its being more bulky and less agreeable to swallow, while it certainly possesses no recommendation which can render it superior to calomel. Sometimes I find one or two grains of nitrate of potash an useful addition to the calomel and sugar.

"Having disposed of the first indication, and cleared out of the system any acrid matters that might be rebellious and capable of exciting irritation and feverishness; having moreover unloaded the blood-vessels of some of their watery and solvent elements by the same remedy; we may now have recourse to our means of *alleviating the local distress*, in other words, of soothing and healing the eruption, subduing the pruritus, and arresting the morbid discharge. We can

do all this by the benzoated oxide of zinc ointment rubbed down with spirits of wine, in the proportion of a drachm to the ounce. This ointment should be applied abundantly, and gently distributed upon the surface, until every part of the eruption has a complete coating. The ointment should be applied morning and night, and if accidentally rubbed off, or used upon parts exposed to the air and friction, it may be repeated more frequently. When once applied, the ointment should be considered as a permanent dressing to the inflamed skin, and never removed until the skin is healed, unless special conditions arise which render such a process necessary. To ensure undisturbed possession to the ointment, a piece of linen rag should be laid over it and maintained in position in any convenient manner. Thus, when the eruption covers more or less of the entire body, I have a little shirt made of old linen, with sleeves for the arms and legs, and with means of being fastened closely around the legs, and, if necessary, closed over the hands and feet. This little dress is to be worn constantly, night and day, and for a week together, if necessary. It is intended as a mere envelope or dressing to the inflamed and irritated skin; and its saturation with ointment which necessarily ensues, only contributes to its greater utility in that capacity. Where the eruption is chiefly confined to the arms or legs, linen sleeves will be sufficient for the purpose. On the face, no other covering than the ointment is necessary, but the latter should therefore be used the more largely.

"Where the oxide of zinc ointment is employed in the manner now described, the formation of crusts on the eruption is prevented, in consequence of the exclusion of the atmosphere and the consequent absence of desiccation. And when crusts are already formed, the object to be obtained is to soften the crusts by saturating them thoroughly with the ointment, and then by gentle friction to displace them and substitute a thin stratum of the ointment in their place. When the eruption passes from the acute into the chronic state, and the process of exfoliation of the cuticle is active, gentle friction of the skin with the ointment is even more desirable than in the acute stage of the disease, and, at the same time, very grateful to the little patient. On the scalp, the ointment should be applied in the direction of the hair, to avoid matting; and as soon as the oozing of ichorous discharge has somewhat subsided, the hair should be gently brushed. I am rigorous in enforcing the non-disturbance of the ointment; but sometimes my *aides* carry their instructions beyond the proper point, and accumulate the ointment too thickly over a given part, retaining thereby the secretions, and interfering with the cure. In this case, if the finger be pressed upon such an accumulated plate of the ointment, the morbid fluids will be seen to ooze up between its chinks or around its edges, and the source of evil is detected. When such an occurrence takes place, the whole of the ointment should be carefully washed off the part with the yolk of egg, and after drying the skin, fresh ointment should be applied. This excessive accumulation of the ointment takes place most frequently on the scalp, and is encouraged by the matting of the hair: a reason for keeping the hair brushed whenever the nature of the eruption permits.

"Another of my instructions is to avoid washing the inflamed skin; it may be wiped with a soft napkin to remove exudations or secretions; but washing is unnecessary, indeed injurious, as tending to irritate the skin, and to increase the pruritus and inflammation afterwards. While the washing lasts and the irritated skin is softened by the water, the part is relieved and comforted, but the drying which follows, more than avenges the temporary solace of the ablution. On the same principle, I never order or recommend lotions in this eruption.

"In cases of *chronic eczema infantile*, that is, pityriasis capitis and psoriasis partium aliarum, the stimulant properties of the nitric oxide and nitrate of mercury ointments may be brought into operation. The former is specific for pityriasis capitis, in the proportion of one part to three of lard; and the latter, variously diluted, from one part in eight, to equal parts, may be used for the chronic eczema or psoriasis of other parts, particularly of the eyelids. But even in the chronic state of the disease, the benzoated zinc ointment will be found to be an invaluable and indispensable remedy. In the parched state of the skin left by the chronic disease, glycerine may be found of use, as an emollient; but when any inflammation exists, it generally proves irritant, as compared with the zinc ointment.

"We now come to the remaining indication in the treatment of eczema infantile, namely, *restoration of power;* in other words to correct malassimilation and restore the blood to its normal and healthy condition. For this purpose, the great remedy is that admirable alterative tonic, *arsenic*. It is remarkable how well infants of the earliest age bear this medicine, and how rapidly in them it exerts its tonic and assimilative effects. As an effective harmless tonic, arsenic stands alone and without its peer in this vexatious disease. Indeed, in eczema infantile it is specific; it cures rapidly, perfectly, unfailingly. It would be difficult to say as much for any other medicine in relation to any other disease; and I pronounce this eulogium on arsenic after a large experience. The preparation of arsenic which I select is Fowler's solution, the dose two minims to an infant from a month to a year old, repeated three times in the day with, or directly after meals; and as malassimilation is always attended with anæmia in a greater or less degree, I conjoin with the two minims of Fowler's solution fifteen of Vinum Ferri, my formula being as follows:

"℞ Vini Ferri, Syrupi Tolutani, āā ℥ss;
Liquoris Potassæ Arsenitis, ♏xxxij;
Aquæ Anethi, ℥j.
M. Fiat mistura.

The dose of this medicine is one drachm, with or directly after meals, three times a day.

"With these three remedies, namely, the calomel powder, the benzoated oxide of zinc ointment, and the ferro-arsenical mixture, representing, as they do, the three indications for treatment of eczema infantile, I regard the cure as certain and rapid, and failure impossible; and if success were not complete, I should seek for the cause, not in the remedies, but in the mode of administering them. So con-

fident am I of success, that I have often undertaken the treatment of this disease, without seeing the patient, and at hundreds of miles distance; being satisfied for my only *aide*, with the vigilance of an intelligent mother or nurse. I have never known any evil effects, present or future, result from this treatment; but I never fail to give strict injunctions that *if the medicine appear to disagree with the child it should be given less frequently*, say twice instead of three times a day, or *suspended instantly* if the child appear ill; moreover, that, in the event of such an occurrence, the calomel powder should be immediately resorted to. The period of continuance of the remedies must be left to the judgment of the medical man; the treatment sometimes occupies three weeks and sometimes more; and if a recurrence of the eruption should take place, the treatment should be recommenced, and conducted on the same principle, and with the like precautions.

"The *diet* of the child, while under this treatment, must be carefully inquired into; it should be good, wholesome, and nutritious. The leading constitutional indication is to nourish properly, and this idea should be carried out in the food as well as in the medicine. I find the juice of meat of great value in these cases, and it may be given either alone, as beef or mutton tea, or mixed with the other food.

"The consideration of diet and food brings me to an important dietetic medicine, which is of great value in this disease, when the latter is attended with emaciation, and in the chronic stage; in acute cases it is less applicable. I mean the *cod-liver oil*. The child will take the oil greedily in its natural state, and its good effects on nutrition are speedily made apparent: it may be given with safety to the youngest infant. In children somewhat older, and particularly in chronic cases, the cod-liver oil chocolate becomes an useful ingredient of diet.

"When I have wished to avail myself of the excellent properties of the cod-liver oil in conjunction with arsenic, I have often found the following formulæ a convenient vehicle for its use:

"℞ Olei Jecoris Aselli, ʒij;
Vitelli Ovi, j;
Liquoris Potassæ Arsenitis, ♏lxiv;
Syrupi Simplicis, ʒij;
Aquæ Fontanæ, q. s. ad ʒiv.
M. Fiat mistura.

The dose is a drachm three times a day, with or directly after meals.

"Where eczema infantile is complicated with diarrhœa, or congestion of the mucous membrane of the air-tubes or lungs, the arsenical remedy should be instantly suspended; the calomel powder immediately administered, and the ordinary antiphlogistic remedies adopted, magnesia and aromatic confection for diarrhœa, and ipecacuanha for the bronchitic or pulmonary congestion. Where the air-tubes are loaded with phlegm, an emetic is useful; and a poultice to the chest and abdomen will be found an useful adjuvant."

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1856.

The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, &c.

Essays on State Medicine. By Henry Wyldbore Rumsey. (8vo, London, Churchill, 1856, pp. 424.)

The phrase *State Medicine* is sufficient of itself to arrest the attention of all Englishmen. Not, alas! that it is likely to awaken in them a desire to learn its oral significance; its effects will be rather that of causing them to erect at once those dear bristles of political, municipal, and social rights, on the muddy borders of which the true Briton loves to wallow without striking into the purer and profounder depths; and armed with which, he contrives in the most ingenious manner to confuse and baffle the best measures of the best government for his social and general welfare. Not for a moment would we depreciate those laws which set a boundary to the interference of Government with the wishes and desires of the people, and which render it necessary that they should be consulted in all things which may be deemed necessary for their benefit; but if Government is to be anything more than a mere farce, there are certain things which it is incumbent upon it to take the initiative in, and to spare no effort for carrying into effect; such, for example, as the protection of individual members, or sections of the people, or of the whole community, from dangers without or within. This is admitted in those more evident instances in which the country is liable to invasion, property is endangered, and the person is exposed to injury by accident or malevolence; but in the more deadly, but less apparent, instance of disease, it is neither admitted nor comprehended by the mass of the people.

Nor, indeed, is Government altogether free from a similar charge. Such efforts as it has directed, from time to time, towards the prevention, or, indeed, the relief of disease, have been so irregular, so contracted in scope, so incoherent in design, that they have indicated an imperfect appreciation of the necessity of measures adopted, and an ignorance, or indisposition, to make use of the methods most fitted for carrying them out; and, in consequence, these measures have in no small degree disgusted the people with the very notion of State interference for the preservation of health.

Medicine, in its relation to nations and masses of people, is a matter

which it especially behoves a government to take into its own hands, for there are but few among the most intelligent nations, save those who have given particular attention to the subject, who comprehend those reasons which render other than individual exertions for the preservation of health necessary; who know, in their fullest extent, the destructive effects of the commonest diseases; who understand the degree in which those diseases are preventible; and who are acquainted with the methods of prevention. State medicine is a measure which must proceed from the educated few to the many; it is a subject which it is incumbent upon those who comprehend it to teach to those who do not, and this not only when the terrible panic of a pestilence causes the mass to ask for the means of prevention, but at all times, and at all seasons; it is a subject that it is the especial duty of a government to take to itself, unfold, and carry out, not waiting until it is compelled to adopt lagging and abortive measures, by the devastations of wide-spreading diseases and the clamours of a terror-stricken people.

But, truly, the Government and people of England are less to blame in this matter than is generally supposed. The preservation of health and the prevention of disease might be thought the peculiar province of the physician; yet *hygiène*, properly so called, is not taught in the medical schools of Great Britain and Ireland, except as an incidental thing; neither do the representative corporations of medicine require a knowledge of it from those who seek fellowship with them. Hence, it follows, that hygiène, as a science, is almost unknown to the bulk of our medical men; hence it meets with scant attention from them; and hence, we believe, a prime source of that neglect of hygienic measures, by the people on the one hand, and the Government on the other. There have always been certain professional men, and their number rapidly increases, who have stood forward and advocated the claims of hygiène upon the profession, the public, and the State; and at no time has the State sought in vain for the aid, too often little appreciated, of men qualified in every way to advise what was best for the sanitary welfare of the people; but that wide-spread co-operation, which would arise from a correct knowledge of the scope and bearing of true hygiène,—which is necessary for its attainment, and without which it is impracticable fully to impress upon the public and the State the full value of medical polity,—has been, and is still, altogether wanting in the profession. Indeed, it is as necessary that the State should interfere for the direction of the medical corporate bodies, and medical institutions, as for the preservation of the health of the whole nation. This is a painful subject, but it is one which requires raking up from the very bottom, and exposing in all its glaring absurdity. It is time that the medical corporations, and the medical profession generally, became roused to a sense of the anomalous position in which they stand with reference to the people and the State in this matter. The popular opinion that the doctor is for the *cure*, not for the prevention of disease, is an offspring of the present mode of teaching and practising medicine. We believe that until hygiène becomes an essential requirement among the regulations for examination before every examining medical board, and until it is

taught in every school of medicine, medical polity will never be thoroughly respected and appreciated by the people and the state.

We hail with welcome any work which, like Mr. Rumsey's, seeks to unfold the scope and aims of state-medicine; and which discusses the difficulties which impede its development in Great Britain. Such a work has long been wanted.

Mr. Rumsey, in a series of essays, gives the outline of a sanitary code; states the requirements of education in the healing and health-poisoning arts; dilates on the subject of sanitary inquiry in relation to England; gives the history, present condition, and requirements of medical relief for the poor; exposes the fetid condition of the present local sanitary administration; and describes the benefits which would arise from a health-police, in connection with a local medico-sanitary service.

To those who, like ourselves, have been victimised by corporations, magistrates, local boards of health, and boards of guardians, while they were enacting certain suppositious sanitary functions; or while they were setting themselves in opposition to all law and reason, Mr. Rumsey's work will prove most interesting, probing, as it does, the sources of those obstacles which impede or render abortive the best efforts of the medical man, for the relief of the sick poor, particularly during times of pestilence, unfolding, as it does, the methods by which those obstacles may be overcome. To those of the profession who have regarded sanitary matters indifferently, Mr. Rumsey's work may prove a means of arousing other and better feelings; and to all those, professional or unprofessional, who care for the welfare of their fellow creatures, Mr. Rumsey's work will be invaluable, giving, as it does, a comprehensive and interesting view of the present condition, and the requirements, of sanitary reform in England.

Our notice of Mr. Rumsey's work may be fittingly confined more particularly to that Essay which contains the *sum* and result of his labours,—the 'Outline of a Sanitary Code.'

"The agenda of a state," he writes, "with regard to the public health, may, I believe, be advantageously comprised in three great divisions:"

Division I. *Subjects concerning which the state should direct investigation.*—(a) *Statistics:* (*a*) of *population*, (*b*) of *mortality*, (*c*) of *reproduction*, (*d*) of *sickness*, *accidents*, and *infirmity*. It has been assumed, somewhat too hastily, that facts of this kind cannot be collected, fully and accurately, by public authority, without infringing on private rights and social proprieties. But, at all events, the census of population would show the total number of sick, the hurt, and the infirm; whilst more precise information on the subject could at all times be obtained amongst those classes of society, which owe, as it were, such information to the public. And as the numerical ratio which these classes bear to the whole population is known, some estimate, with the aid of mortality returns, might be formed respecting the sanitary state of the entire population. Moreover, by placing the members of the medical faculty in a more correct relation with

the state, a still nearer approximation might readily be obtained, especially in times of unusual sickness. The public registration of diseases and injuries should include particulars respecting their connection, in different cases, with occupation, social neglect, or mismanagement, personal habits, natural and artificial peculiarities of locality; with climate, weather, and season; and with the density, grouping, and migration of the population. This department of registration should also contain full and correct details relating to epidemic visitations, noting all the circumstances connected with the origin, advent, propagation, and decline of zymotic diseases." (pp. 9, 10.) (*e*) Of *dwellings*; (*f*) of *food*; (*g*) of *animal life*.

(B) *Topographical inquiries* and *meteorological records*.—(*a*) The physical geography of a district; (*b*) the chemical analysis, at stated intervals, of its various soils, water-springs, wells, and rivers; (*c*) meteorology.

(C) *Judicial investigations—Forensic medicine*.—(*a*) Involving death-inquests; (*b*) personal disqualifications; (*c*) questions of succession, survivorship, personal identity, and pregnancy.

The subject of *mental epidemics* is, we are aware, treacherous ground to tread upon, as it so often involves phases of religious belief, but in so far as peculiar superstitions and delusions tend to foster suicide and insanity, we think that they might have found a fitting place, with proper restrictions, in the first division of Mr. Rumsey's code.

II. *On those arrangements for the personal safety and health of the people which require for their enforcement direct enactments or local regulations, with the infliction of penalties for their non-observance*.—(A) *Measures for the prevention of disease*. (*a*) *In locality*; (*b*) *in the construction of buildings*; (*c*) *by the purification of buildings and towns*; (1) *by the removal of nuisances*; (2) *by drainage and sewerage*; (3) *by a fit ordering of pavements*; and (4) *by an abatement of the smoke nuisance*. (*e*) *By fostering healthy progeny*; (1) involving the question of hereditary disease by marriage; (2) the qualification of practitioners in midwifery, and nurses; (3) lying-in hospitals, orphan asylums, and foundling institutions; and (4) private and associated efforts to these ends. "The intervention of legal authority is of the greatest importance in promoting the healthful training of the young: by checking, if not prohibiting, the employment in factories of mothers having young children; by limiting strictly the age at which children can be engaged or indentured in factories and workshops; by regulating the number of hours during which they can be employed, according to their age; by frequent and independent medical inspection and report concerning their physical condition and growth whilst so employed; by forbidding, absolutely, the employment of children in mines, chimney-sweeping, and other equally injurious occupations; by restrictions upon mental exercise, long confinement, and vehement competition in schools; by securing, under legal compulsion, the proper site, construction, ventilation, drainage, and water supply of all buildings occupied by young people of every grade; by special regulations as to the diet, clothing, education, and general manage-

ment of those children who are under the immediate guardianship of the public." (pp. 21, 22.) (*f*) *By supervision of the sale of food;* (1) by inspection of manufactories, and places for the sale of articles intended for aliment; (2) by control and inspection of the production, importation, and manufacture of articles known to be injurious; (3) by a system of police for the detection of abuses (adulterations, &c.); (4) by supervision of the method of feeding animals for the butcher, and of slaughter-houses; (5) by prevention of intemperance; (6) and by checking the use of articles of food and drink injurious to health, and promoting the consumption of those articles which are known to be most conducive to the health and vigour of man. (7) "Certain notions of political economy, prevalent in some countries, seriously interfere with correct legislation on this question. But no theoretical views should be allowed to release any state from a duty incumbent on all governments—namely, to provide for the instruction of all classes, working people especially, in those maxims of health preservation which relate to the choice and preparation of food." (p. 23, 24.) (*g*) *By supervision of the sale of medicines and poisons;* (*h*) *of other trades and occupations;* (*i*) *of locomotion;* (*j*) *and of public amusements and recreations.* "The government should not only control popular amusements, but should take care to furnish opportunities to the people for innocent and beneficial relaxation." (p. 28.) "In order to complete administrative arrangements on the subjects mentioned in this and previous sections, it is necessary to organize a proper staff of medical officers, as sanitary visitors, as instructors of the poorer classes in all matters relating to hygiène, and as detectors of the threatenings as well as of the causes of disease." (p. 28.) To the section (*j*) Mr. Rumsey adds the surveillance of *prostitution.* (*k*) *By supervision of public establishments,*—educational, industrial, reformatory, criminal, charitable, and sanative; (*l*) and *by supervision of the burial of the dead.*

(B) *Measures for the arrest and palliation of disease.*—(*a*) *Under ordinary circumstances and at all times;* (1) by medical relief of the poor; (2) by hospitals, general and special; (3) and by medicines and dispensaries. (*b*) *On the advent and during the prevalence of any important epidemic or pestilential disease;* (1) by preparatory measures; (2) by domiciliary visitations; (3) by vaccination; (4) by quarantine, and by a supervision of *animals*, and an adoption of measures for the prevention or palliation of diseases among them.

III. *On the establishment by law of an organized machinery for carrying into effect the aforesaid inquiries and regulations, for deliberation and advice in emergencies, and for the administration of existing laws.*—(A) *The education of medical and other technical, scientific, and administrative agents.* (1) A scheme of medical education; (2) regulations respecting licence for practice and registration; (3) promotion of district faculties, to which, in connection with a central metropolitan council, might be committed the administration of local affairs requiring the attentive deliberation and action of the medical body, the promotion of medical observation and science, and particularly the power of advising the district courts of health hereafter to be pro-

posed." (p. 43) (4) Protection of the rights and immunities of the profession; (5) registration of those who professedly devote themselves to ailments of particular parts of the body, dentists, chiropodists, &c.; instruction, examination, and licensing of practitioners of pharmacy, bleeders, cuppers, &c.; (6) provisions for education, examination, license, registration, duties and rights of *veterinarians.* (B) *The institution of official authorities—boards and officers for central and local superintendence and action.* (*a*) *The institution of councils and boards, central and local.* (1) A superior sanitary and medical council, presided over either by a minister of public health or connected with the ministry for home affairs. This council might consist of several *departments*, to wit, for (*a*) the vital and medical statistics of the entire population; (*b*) sanitary engineering; (*c*) direction of preventive measures relating to food, drinks, and medicines, regulation of trades, &c., locomotion, and the burial of the dead; (*d*) sanitary control of public education, pauper, criminal, and health establishments; (*e*) superintendence of medical education. The council to consist of nominees of the crown or state, of those recommended by certain learned and professional bodies, of the superior medical authorities of the war departments, and of those who may be considered by the other three portions as especially qualified to render valuable assistance in the management of public health. The section for medical education should consist wholly of the recognised heads of the medical profession. (p. 47, 48.) A local board to be established in every sanitary district, consisting of magistrates and rate-payers, men of science, and parochial clergy, elected by the two former portions. That the medical element of local government should be distinct, and should form a sort of auxiliary committee, or faculty, for deliberation, advice, and co-operation in each sanitary district." (p. 48.) (*b*) *The territorial division of the country into sanitary districts;* (*c*) *the appointment of officers of various grades and functions;* to wit, (1) *medical inspectors of circuits, engineering inspectors,* and *chemical inspectors*, under the metropolitan or central council; (2) an *officer of health*, a district *chemist*, a district *veterinarian*, a district *engineer*, or *surveyor*, and in every principal seaport a *medical superintendant of quarantine*, under every district court of health; (3) a *medical officer* or *visitor* for the general superintendence of the poor in their dwellings, and for attendance upon them in sickness or accidents; *apothecaries* or *dispensers*, where necessary; a searcher for *nuisances;* a staff of *assistant visitors;* an *obstetrical officer;* one or more *midwives;* and educated and licensed *nurses,* in every parish, township, or sub-district.

Such are the heads of the subjects and the divisions of a code, by which Mr. Rumsey seeks to draw attention to the UNITY OF STATE MEDICINE; and to point out the connection, legislative and administrative, which ought to exist between the several departments; and in the subsequent essays in his work he more fully developes this object, and shows "the singular absence of comprehensive design which has characterised all attempts at legislation in this country, whenever circumstances or events have imposed on government and parliament the necessity of adopting measures, either for preserving the health

and diminishing the sickness of the people, or for regulating the education and duties of the medical profession." (p. 4.)

The fourth Essay, on the 'History, Present Condition, and Requirements of Medical Relief for the Poor, and its Relations to Political Economy and Sanitary Management,' is peculiarly valuable and interesting.

Mr. Rumsey's work is a boon to the profession, and it ought to be in the hands of every medical man in the country. It is, moreover, a work admirably calculated to convey a correct knowledge of the scope and objects of true sanitary reform to all those who have an interest in the subject.

The influence of Tropical Climates on European Constitutions, including practical observations on the nature and treatment of the Diseases of Europeans on their return from Tropical Climates. By JAMES RANALD MARTIN, F.R.S. A New Edition. (8vo, London, John Churchill, pp. 599. 1856.)

This is not a mere reprint of the last edition of the well-known and celebrated work on the 'Influence of Tropical Climates on European Constitutions,' which was composed by the late Dr. James Johnson and Mr. Martin, in 1841. It is a "new edition," in which the entire work is re-cast and re-written. "Even the introductory chapter is entirely re-written—so much only of Dr. Johnson's observations being retained," says Mr. Martin, "as appeared to me proper to the subject, and all beyond is exclusively my own composition."

Mr. Martin, however, has adhered to and preserved the medico-topographic and statistical character of his original official reports, and in doing this he has been actuated by the conviction that, next to the importance of physiological investigations, stand those which relate to the external causes of disease. He has likewise continued, so far as the scope and intent of the work admits, an examination of the physiological influence of climate, both Asiatic and European, so as to give the greatest possible degree of firmness to the grounds of preventive medicine.

Mr. Martin has also reprinted from the 'Lancet' certain articles published by him during the last six years, on the nature, causes, and treatment of the diseases of Europeans on their return from tropical climates; and in this way he has supplied what was obviously wanting in former editions, for a work upon the influence of tropical climates upon the European constitution could not be complete which did not comprise some description of the sequelæ to tropical diseases, and of the counter-influences which, under an European climate, affect the health of persons who have long resided in a warm region.

It is not necessary for us to say anything to secure a favorable notice of a work which has become so established a text-book upon the subject of which it treats—a work which is read by every one, both at home and abroad, who is wishful to gain a thorough knowledge of the science of medicine—for every one who has read the old, will assuredly make a point of seeing for himself wherein the new edition differs

from it. For our own part, we have read the work with much additional pleasure and profit. We could have wished, however, that Mr. Martin had dilated a little more fully upon one or two subjects, and particularly upon one, and that is the treatment of remittent fevers. "Very few of the author's original doctrines," Mr. Martin quotes approvingly a remark of Dr. James Johnson, in the edition of 1841, "have been subverted, or practices exploded, during a period of more than a quarter of a century." Now, is it so with respect to the treatment of remittent fever? In asking this question, we have an eye particularly to a paper noticed in a former report ('Abstract,' XX, p. 253,) in which Mr. Hare, the surgeon to the 1st Bengal Fusileers, endeavours to show that the practice introduced by Dr. James Johnson, of treating remittent fever by mercury given to salivation in place of the treatment by bark, previously in vogue, had been a very questionable improvement. He attempts to show, moreover, that the treatment by a milder amount of mercurialization, which had gradually crept into vogue, in consequence of the injurious effects of salivation in many instances, is much less successful than the treatment either by bark or by salivation; we thought at the time, and still think, that the arguments advanced were deserving of much attention. Mr. Martin, however, does not enter into this question, all-important though it be.

Of mercury in the treatment of remittent fever, he says:

"When bloodletting shall have produced its results on the circulation, the febrile movement, though subdued, being still in serious progress, we have recourse to this mineral. It is at once the best aid to the abstraction of blood, and the best preparation for the effective action of antiperiodics, such as quinine, arsenic, &c., through its active operation on all the depurative functions. Robert Jackson, though no favourer of mercurial treatment, admits that in fevers, complicated with abdominal congestion, calomel is a remedy of the first importance. He says that it repairs mischiefs which no other means with which we are acquainted are capable of touching. This is the simple truth, and it constitutes the reason why this remedy has at all times held so high a place with the practitioners in our worst climates.

"As it is better to repeat than to leave an important subject in any doubt, I here beg leave to transcribe from my article on Hepatitis a summary of the actions of mercury, and especially of those of calomel: It is for the very reason that calomel assists powerfully, both in 'drawing off' accumulations, and in promoting '*increased secretion*' that it proves of such value in aid of bloodletting. It is, in fact, by this very double action of purging and increasing secretion at the same time, that calomel relieves the loaded and inactive vessels of the diseased gland; not to speak of the other acknowledged physiological influences of this mineral—such as its increase of *all* the secretions and excretions of the body—its influence on the capillary circulation—its febrifuge effect—the peculiar specific power ascribed to it by Gooch and others as an antagonist to inflammations, whether general or local—its stimulant power over the absorbent function—its power of unloading, at the same time that it gives a new impulse to the vascular system—its peculiar power in removing viseid and tenacious intestinal secretions—its alterative, solvent, and

antiplastic effects on the blood; these are the actions and uses ascribed to mercury by the ablest of our physicians and surgeons, and they are such as place this remedy second only in order and importance to blood-letting, in all the more acute hepatic affections of India. That mercury enters into intimate union with the elements of the blood is now an ascertained fact. It must, therefore, 'modify its plasticity, and influence all the organic functions to which it is subservient.' I have only to add here that the above summary is quoted from the former edition of this work, with commendation, by Dr. Copland, in his article on Diseases of the Liver.

"Dr. Billing, speaking of the treatment of disease by 'calomel and opium,' says justly, that though powerful allies to the antiphlogistic treatment, they have often failed from being employed without being supported by bleeding, or purgative, or emetic, or diaphoretic medicines. This is equally true of tropical diseases, and I have seen enormous quantities of calomel given with nothing but evil effect, because its action was not solicited and supported by previous depletory means.

"Robert Jackson states, that the preparation of the subject by previous abstraction of blood is indispensable to the success of mercury, in the more concentrated fevers and more complicated dysenteries of tropical climates."

Of bark in the treatment of remittent fever, Mr. Martin says:

"Sir James Annesley observes, that visceral disease is the necessary result of the neglect of depletory means, including mercurial purgatives; and that congestions often lead to inflammatory action, especially if bark or arsenic have been freely administered during the stage of congestion, and of disturbed and impeded secretion; and this is in accordance with general experience. Here again we perceive that quina, like other powerful remedies, may not only prove of no effect, but may be administered so as actually to be injurious. It may do signal good, or even prove hurtful, according as the patient may or may not have been prepared for the actions of the bark. To apportion the dose and determine the right time for exhibiting it, so as to secure the full tonic and antiperiodic influences of the quina, we must appreciate accurately the circumstances in each individual case; the stage of the fever, and the effect of the previous antiphlogistic means. The random exhibition of quina by timid, careless, or inexperienced practitioners, does infinite harm; and, in former times, when bark alone was relied upon for the cure of all tropical fevers, the results were horrible.

"Where, with a state of general plethora, visceral congestions remain unsubdued, or only partially removed, the secretions being scanty and depraved, with the pulse full and hard, and the skin constricted, dry, and hot, the time for the exhibition of bark has not yet arrived. Robert Jackson says, that bark is not to be relied on for the precipitate arrest of remittent fever, either in the West Indies or in other countries. Bark and the disulphate of quina are efficacious in arresting the remittent fever of Bengal, when venous congestions have been overcome by previous depletory means, when the pulse has been reduced in force and frequency, when the secretions are in free action, and the skin relaxed; when these preparatory results have been obtained, we may then be sure of establishing the antiperiodic influence of quina, with the best effect, and

without risk of producing any injury. It then becomes a sovereign remedy; and the nearer the patient can be brought to the state of remission, the surer will be the operation of the antiperiodic. It must now be given in full doses, so as speedily to establish its influence. The amount of dose, and the frequency with which it is to be repeated, will depend on the nature of the fever;—where paroxysms are violent, or where the sufferer is in a malarious locality, the doses should be large, and often repeated. It is better to exhibit the quinine in five grain doses, often repeated, than to give scruple doses, as recommended by some writers; for by the former plan we have the advantage of observing the effects as we proceed, and we can withhold excessive doses."

Nor do we find this answer to Mr. Hare in Mr. Martin's excellent remarks upon the application of remedial means to the treatment of an individual case of remittent fever:

"Here we find, on experience," he says, "that the first and most immediate object is, to reduce the force and frequency of arterial action during the paroxysm, which if allowed to go on unrestrained, would injure or destroy some organ essential to life.

"If the patient be seen in the forenoon, on the accession of the first, second, or third paroxysm of ordinary remittent fever, if he is of a sound constitution and not beyond middle life, bloodletting from the arm, while the patient is in the recumbent posture, should be practised to the extent of relieving the sufferer from præcordial oppression, from visceral fulness and congestion, or from the intensity of headache, whichever may predominate. If along with reduced force and frequency of the pulse, and reduction of the morbid temperature, we obtain from the operation a gentle relaxation of the skin, we have the best evidence of relief from visceral congestion, whether the operation be performed for the cure of fever, dysentery, or hepatitis; the quantity of blood abstracted being regulated by the effect, and not by an arbitrary measure in ounces. It will sometimes happen, however, from peculiarity of habit, or other cause, and notwithstanding the utmost circumspection, that the relaxation of the skin will proceed to sweating, with symptoms of depression of the vital powers; then from half a grain to a grain of opium, or from fifteen to twenty minims of laudanum, with as many of chloric ether, should be administered. This will impart tone to the heart's action, and soothe the nervous excitement, while it will allay gastric and intestinal irritation. It is only in cases of depression, however, such as this, that opium is to be recommended in the very early treatment of fever; but, when requisite, it will be found to calm both mind and body. Let the physiology of the disease, and the habit and condition of the patient guide the application of remedies, and we shall approach as nearly to the correct measure of means of cure as human endeavour can compass.

"Unless the fever assume a severe form, one general bloodletting, practised as stated, in the recumbent posture, and under the studied observation of effect will, on the average, be found sufficient to relieve the patient from abdominal or cerebral oppression. Bloodletting, used as here directed, will be found to simplify the application of all the subsequent means of cure. Within an hour after the bleeding a dose of calomel with compound extract of colocynth and James's powder should be exhibited, followed in two hours by a powerful cathartic, such as

infusion of senna with sulphate of magnesia. After the free action of these remedies we shall obtain in the afternoon some degree of remission; and the patient should be directed to take at bed-time from six to ten grains of calomel, with four of James's powder, if the skin be dry. Here, within eight or ten hours of first seeing the patient, we perceive that of the means above generally described, bloodletting, mercury, a sudorific, and a purgative, have been used, while the patient has been allowed free recourse to cooling diluents.

"On the early morning visit of the following day the patient will probably be found in a more complete state of remission, when the sulphate of quina alone, or in combination with the purging mixture, should be freely and repeatedly administered;—given in this latter manner the quina applies itself to the whole extent of the mucous digestive surface, so as to give full effect to its tonic and antiperiodic influences; and a larger dose of it can thus be borne in the early stage of fever, than if given without the purgative. This is an important consideration; for the quina, rightly administered, will arrest the progress of a mild fever, and save the life of a patient in a severe one, by mitigating the symptoms.

"By the forenoon the paroxysm may recur in a milder degree, though to such an extent as to demand the application of leeches to the epigastric region, if any oppression or fulness exist there, or behind the ears if there be headache; while a mixture composed of antimonial wine with the acetate or nitrate of potash should be given every two hours, so as to soften the skin and determine increased action of the kidneys. It is usual in the remittent fevers of Bengal to give from five to ten grains of calomel, with or without antimonial powder, at bed-time, followed in the early morning by an active purge, and when the last is under operation quinine in solution is given freely. This is a good practice, and a sufficient means in itself to cure some of the milder forms of the fever under consideration;—preceded by an adequate abstraction of blood, this practice will even cure a severe fever. Thus, under the favorable circumstances contemplated, we witness the daily decline of the disease, and the daily diminishing occasion, therefore, for the use of active measures of cure, until towards the third, fifth, seventh, or ninth day convalescence is completely established.

"If remittent fever has existed unrestrained, however, for several days, and the patient is not seen till the accession of the third or fourth paroxysm, or even later, provided the general powers of the constitution remain uninjured, a general bloodletting is still the principal means to save life, followed by calomel, purgatives, and quinine, in the manner previously indicated. But if, on the other hand, the duration of the disease being as above, the paroxysms have become indistinct, running into each other with but brief or ill-defined intervals, while abdominal or cerebral complications arise, as indicated by epigastric fulness with anguish, or by appraaching stupor or delirium, congestion now wearing the aspect of inflammation; then the time and manner of applying our more active means demand the nicest care to insure, not only their just effects, but their safety. Bloodletting may even now constitute the principal means to save life, but the blood must be guardedly abstracted, whether generally or locally; and calomel becomes indeed a remedy of necessity, as Robert Jackson would rather refuse to call it, in the treatment of

the fevers of the West. To save the patient from impending dangers, in the case of unrestrained fever here contemplated, the medical attendant must be neither rash nor supine: sinking would result from the rash application of means, and effusion into one or both cavities involved in those fevers would be the result of timidity or indecision. Generally speaking the blood must here be abstracted by leeches at the accession of the paroxysm; antimonials must be used—cold must be applied to the shaved head—sinapisms and blisters must be applied; but on the influence of calomel chief reliance must be placed. It must be given every three or four hours, with an occasional mild aperient in the intervals, until the dangerous symptoms shall have yielded; and this favorable state is often observed to be coincident with the mercurial influence, as evidenced in the odour of the breath, or on the gums. Dangerous symptoms such as are here described will sometimes arise suddenly, without any loss of time, or without any neglect in the treatment; and when such conditions are associated with yellowness of the skin, in persons broken in health, or of a feeble constitution, or of dissipated habits of life, or who may have undergone much mental distress, the chances of a fatal termination are imminent.

"In the remittent, as in all forms of periodic fever, the stages of danger are those of the accession and of the decline of the paroxysm: in the first, the violence of arterial action may proceed at once, unless restrained by treatment, to destroy life by serous effusion; while, in the second, so great a prostration of the vital powers may succeed to the previous tumult of vascular action, as to terminate in a feeble and irregular pulse, a damp coldness of the surface and of the extremities, despair, and death. I have seen one paroxysm of Bengal remittent fever, and of jungle fevers, cause death in both ways, within twelve hours; and the first instance, attended with very painful circumstances, occurred within a few months of my arrival in India. A young officer was seized with fever at 11 a.m.; but nevertheless, he went into the China bazaar of Calcutta. He returned to his quarters in Fort William at 3 p.m., and placed himself under the care of a staff-surgeon there. He was bled at 4, and he was dead at 7 p.m. The same operation, practised at noon, would probably have saved his life.

"When the spleen is affected with enlargement, either of the acute or chronic nature, mercury in all forms had better be avoided in the treatment of the fever; for there is in the splenitic complication a dissolved condition of the blood, with general cachexia, that should preclude the use of this powerful mineral. Bloodletting, general or local, when found necessary, should be cautiously used, and carefully regulated in these cases; and the oozing from leech-bites should be carefully and promptly arrested.

"It is necessary to be on our guard against irregularities in the paroxysms of remittent fever, as they occasionally vary not only in their time of accession, but there may arise a double or anticipating night paroxysm, in addition to that of the forenoon. This will require a double attention, especially in respect of the time of using remedies.

"A close observation is indeed necessary as to every event and circumstance which may arise in the course of these fevers; for upon the amount and accuracy of such knowledge will depend not only the selec-

tion and application of our means of cure, but the affixing of the proper time of using them—often a vital question.

"The result of each paroxysm on the cerebral and abdominal organs should also be carefully noted, for by this knowledge we regulate both the force of our remedial means, and the frequency with which their application may be needed. Through such observations also we come to estimate aright the powers and capabilities of the patient; for the greater have been the numbers of paroxysms, the more the viscera are likely to be oppressed and congested, and the less power consequently do we find in the patient either to sustain him under further invasions of fever, or to bear him well through the operations of the necessary remedies. In such a case there will be a tendency to exhaustion, and, while we act with decision and calmness, we must be doubly watchful of effect. I have preferred a simple narrative of the treatment of remittent fever, such as is here presented, to a detail of hospital or other cases; for I have seen that, in the treatment of fevers and other acute diseases, cases are too often seized upon and followed out to the letter, by young medical officers, to the disregard of the differences of circumstances, and to the exclusion of reason and reflection on the cases before them. Cases thus become a kind of pattern in routine, and the young naval and military surgeon is injured where it was intended to afford him help. He is thrown off his reasoning powers by an array of cases, and enticed into a groove of routine, out of which it will require much exertion and firmness on his own part to extricate him. A case-book thus, while it purports to be a guide for the treatment of dangerous, varying, and violently acute diseases, carries with it, when used in the manner stated, sources of weakness, even to those whom it intends to benefit. It is otherwise in respect of chronic lesions, the results of acute tropical diseases, in which the contitution of the patient, and the symptoms are at once more subdued, brought more into a common level, rendered thus less variable, and for the management of which ample time is given to the inexperienced for consideration of means, for reflection on their effects, and for consultation with the elders of the profession.

"In chronic disease, again, no sudden changes occur, as the result of youth, constitution, influence of season, or of epidemic conditions—all which exercise powerful, immediate, and varying effects in acute disease.

"We cannot defer till to-morrow the treatment of a case of fever, dysentery, hepatitis, or cholera; duty requires that we should act on the instant; and to do so with justice to the patient requires at least a knowledge of pathology and of the principles of medicine: we should not have to rely on a guide or case-book."

The Pathology of the Diseases of the Army in the East. By R. D. Lyons, M.B.T.C.D., and Wm. Aitkin, M.D. London, 1856, pp. 120.

In the spring of 1855, a commission, having at its head Dr. Lyons of Dublin, was sent out by the British Government for the purpose of elucidating the pathological history of the army in the East. Dr. Lyons went out first, and prepared the way for his assistants, Dr. Aitkin and Dr. Doyle, by making some necessary arrangements in the hospital at Scutari. After this, he proceeded to the Crimea.

Dr. Aitkin, the first assistant, and formerly pathologist in the Glasgow Royal Infirmary, had the superintendence, and made all the examinations of the patients dying in the General Hospital at Scutari, and Dr. Doyle was attached to the Barrack Hospital in the same place.

The Report is the joint production of Drs. Lyons and Aitkin. It is divided into two parts,—the first part being devoted to the clinical history and morbid anatomy of the diseases of the army in the East,—the second to the pathological anatomy of these diseases, arranged in the order of organs and tissues. There is also an appendix, containing an account of meteorological observations taken at Scutari.

Great care has been expended upon the Report, and much valuable matter is contained in it, only it must ever be regretted that the labours upon which it is based were deferred until the real brunt of the war with disease was over. As it is, however, the Report is very interesting, and this we propose to show by the Report upon the Report which Dr. Lyons has added, in the form of a letter to Lord Panmure. Dr. Lyons writes as follows:

"London, March, 1856.

"My Lord,—I have the honour to present your lordship, in this report, the results of the investigations conducted by me and my assistants, into the Pathology of the Diseases of the Army in the East.

"It may be permitted to me to state at the outset, that these results are not by any means so complete, in several respects, as I originally anticipated they would be. Various causes have concurred to this end.

"On my arrival at Scutari, at the close of April, 1855, I found that all but the expiring embers of the terrible epidemics of the past winter had disappeared. To the past no methods of pathological research are applicable; and to have been enabled to avail myself of the almost unparalleled opportunities for investigating the nature of disease, which had unhappily been presented at Scutari, I should have been in the East not less than fully two months earlier than the date at which my mission commenced.

"To prosecute with success investigations such as those intrusted to me, it requires that suitable apartments, specially adapted for the purpose, and also that instruments and other appliances, shall be in readiness. The latter it was found necessary to have made in this country; the former it was fully expected could be furnished at Scutari. Having already brought this subject under your notice, it will be merely requisite to state here briefly, that not until the expiration of more than two thirds of the period originally assigned for our inquiries, were I and my assistants put in possession of the necessary instruments and appliances for the due prosecution of our labours.

"Notwithstanding the disadvantageous position for the conduct of a scientific inquiry in which I thus found myself placed, different as it was, in all respects, from what I had been led to anticipate, I proceeded to make the best use of the materials at hand. I established for myself and my assistants a regular system of clinical visits to the hospital wards, for the purpose of determining the essential phenomena of the diseases presented in the living; and, as far as the means at our disposal allowed, we prosecuted inquiry into the pathological characters which they exhibited in the dead.

"After some time spent in the investigation of disease at Scutari, it became apparent to me, that for a due and complete appreciation of the pathological characters of the diseases of the army in the East, and for the determination of the most important medical questions connected with their nature and origin, the materiél presented by the hospitals at Scutari, at this period, did not suffice. The great morbid types which had been so fearfully illustrated a few months previously, had become all but extinct. Fevers and dysentery still continued to present themselves, it is true, but in much mitigated forms and diminished numbers.

"Having, therefore, carried my researches to a certain issue at Scutari, I thought it advisable to proceed to the front, with the object of determining, if possible, the primary nature and pathological characters of the diseases, which, in the hospitals of the Bosphorus, showed themselves, as it seemed, in more or less of a secondary form. Accordingly, having left the charge of the Pathological Department at Scutari, and the superintendence of the construction of the Mortuary and Pathological Rooms, to my first assistant, Dr. Aitken, I proceeded to the Crimea in June.

"My anticipations were correct, for, in fact, I soon found that without a lengthened experience of both medical and surgical pathology, as presented amongst the troops in camp, it would not be possible to come to any just conclusions as to the nature of the diseases of the British army in the present campaigns.

"In the prosecution of my observations and researches, I have held two chief objects permanently in view. First, to determine, with as much precision as possible, the primary nature and characters, and the essential phenomena of the diseases of the troops as presented during life; second, to ascertain, by careful post-mortem examination in fatal cases, the actual changes produced by disease in the various organs of the body. In dealing with these subjects, however, in an adequate and comprehensive manner, it becomes necessary to include some other considerations which bear a very close relation to the general pathology of disease. Disease is a process of great complexity, and its phenomena are influenced not only by various external circumstances, in any given series of morbid actions, but also in a marked and important manner by the type of constitution in which these morbid actions are brought into play.

"The constitution of the soldier in the Crimea had undergone the influence of agencies, which, for a long period at least, sensibly depressed it below the average physiological standard, and the effects of which gave a marked character to the diseases from which he suffered.

"It is not my province to investigate the causes here alluded to, which have been elsewhere as ably as fully entered into. So far only as their effects became manifested in the deterioration of the constitution of the soldier, and in the consequent modification of the diseases with which he was affected, am I concerned with them in this place.

"It seems undeniable, that the circumstances in which the British army was placed during the winter of 1854-55, were such as of themselves directly to induce the invasion of disease on a large scale and in a malignant form. Not only was this so in reality, but, even after the lapse of months, and when such causes had ceased to operate directly to any large extent, their effects were still manifest in the unstable health

of the soldier, his impressionability to morbid influences, and more especially in the behaviour of his constitution under the attacks of disease.

"It is also not to be forgotten that, even when to some extent relieved of the harassing and excessive duties to which the men had been exposed, when ill-clothed, ill-fed, and ill-housed in the winter months, and even when food had become both varied and abundant, and most other requisites equally so, two causes still continued in operation, capable of exercising deleterious influences on the most robust constitutions,—namely, the fatigues and night exposure of trench duty, and the singular and rapid vicissitudes of Crimean weather. Of the harassing nature of the duties of a soldier exposed in entrenched lines for twenty-four hours to every possible alternation of temperature and weather, no one can form a full estimate without some practical acquaintance with the operations of a siege. From actual observation in the French and British trenches, I can fully corroborate the statements of some of the most experienced medical officers in both these services, as to the active agency of such fatigues and exposure in the production of the gravest forms of disease.

"With regard to the second class of causes, that due to rapid meteorological changes, I doubt not that your lordship will be put in full possession of the best scientific data on this subject; yet, as directly illustrative of certain well-defined modes of the induction of disease, I may be permitted thus far to notice them. The heavy rains, not infrequent in the summer months, flooding the trenches, and often the huts and tents, caused much suffering, and I believe in many instances could be said to have been directly productive of disease. The great vicissitudes of temperature, scarcely any two successive days presenting the same conditions of the thermometer, must have largely conduced to a similar result. The effects produced by these two causes alone on the health of men unprotected by night and day, when on trench duty, have been very marked, and it is not to be wondered at, if they left lasting and almost indelible impressions, especially on the constitutions of the young and immature.

"It is by no means, however, to be inferred from these considerations, that the climate of the littoral of the Crimea on which the allied armies were encamped is naturally an unhealthy one. On the contrary, there are some very good grounds for quite an opposite opinion, as I shall have occasion hereafter to observe. Considerable immunity has been enjoyed by the allied troops from more than one form of disease, which elsewhere has caused extensive ravages amongst forces in the field. Thus ophthalmic disease has been almost unknown; lesions of the respiratory organs have been of unusual occurrence; and with the exception of certain marshy lands on the borders of the Tchernaya, intermittent fevers seemed to have no habitat within the lines occupied by the besieging armies. The more recent experience in the English camps seems very clearly to establish, that with the realization of the other necessary conditions, respecting moderate duties and fatigues, proper and abundant food, suitable clothing and protection against the weather, the climate of the southern shore of the Crimea is such as to favour the maintenance of a very excellent and satisfactory state of health, even

amongst very large masses of troops. That an opposite state of things is in great part, if not wholly, due to causes which are probably *not* climatic, may be deduced from a consideration of the much less healthy condition of other troops in the same region of the Crimea.

"In treating of the various predisposing causes of disease in operation amongst her Majesty's forces in the East, there is one which may be classed amongst physiological influences, and which demands most earnest consideration at your lordship's hands. I allude to the extreme youth, incomplete physical development, and general immaturity of a very considerable proportion of the strength of several regiments; and constituting, as I have reason to believe, in the total of the army, a number sufficiently great to render the question one of vital moment, and of even national interest, as largely affecting what may be called the physiological economy of the army. Amongst even well-matured constitutions, the hardships and fatigues, trials, privations, and exposure of compaigns, such as those of the past years in the Crimea, must almost of necessity prove largely productive of disease, and induce much mortality. But on the undeveloped frames and the unripe strength of the ill-seasoned recruit, such causes operated with twofold energy, and with a more than doubly fatal effect.

"Not only does the power of resistance to morbid influences, and the consequent invasion of disease in such youths, seem inferior to that of the older soldier; but when attacked, they succumb more readily under the effects of a fever or a flux. And even when such disease does not prove immediately fatal, the convalescence of the young is generally slow, constantly attended by a disposition to relapse, or to the development of those secondary enteric lesions, the almost unfailing result of such fevers as those which prevailed amongst the troops in the East. Again, should constitutional taints exist, as is not uncommonly the case, more especially in regard to the strumous diathesis so general in some of the classes from which recruits are largely raised, the fatigues and privations of active warfare, the exposure and vicissitudes of the field, and the attacks of acute disease, supply precisely the stimulus most calculated to call into active operation various low and complex forms of disease with a slow and lingering course. Such diseased processes either prove directly fatal of themselves, or so complicate other morbid states set up in the system, as to leave no expectation of aught but a fatal issue.

"Such, doubtless, is the rationale of the pathology of many of the examples of tubercular development in typhoid and dysenteric cases, which we have witnessed in the secondary hospitals of the Bosphorus, in some instances causing death by lesions peculiar to itself; in others, inducing most complex processes of disorganization in the vital parts.

"Even when the less formidable of such cases are not actually fatal, convalescence is usually so slow, lingering, and imperfect, that, as soldiers, these youths cannot be, till the expiration of a long period, if ever, sound and effective men; while during such time of convalescence, they but burden the hospitals, required as they often are for the more pressing wants of the field. Thus not only does their illness cause the loss of their own services, but it encumbers the hospital staff, while their transport is an additional pressure on departments already perhaps fully worked.

"The results of surgical pathology corroborate to a large extent the observations just made, which are chiefly based on considerations arising out of the behaviour of the immature constitution under the effects of disease. As a general rule, true at least in a very large part of its usual acceptance, youth forms a favorable element in the calculation of chances in surgical cases. Amongst the troops in the Crimea, however, no such favorable anticipations could be indulged on the score of youth. The constitution of the young, even independently of the presence of actual disease, seemed much impressed by the influence of the various causes already dwelt on; many succumbed almost immediately under the shock of injuries, and in the case of the graver surgical operations, no more advantageous results, but the contrary, appeared to be shown on the side of the young: in fact, youth was not to be counted on as a favorable element in determining a prognosis in such cases.

"In the statements I venture to make respecting the operation of youth and immature physical development as a predisposing cause in the production of disease, I do not rely solely on the results of my own observations. This subject has been the topic of repeated consideration with some of the most experienced and accomplished medical officers in the field, by whom my views on these physiological points have been fully concurred in. And, indeed, I do not believe that any person sufficiently acquainted with the principles of physiology could entertain opinions in the least differing from those here expressed.

"I am not in a position to prove, by actual statistical evidence, the precise proportion to strength in the entire force in the Crimea, at any given date, of those who may be considered as of immature age. I did not possess the means of determining such questions on any large scale; and I do not pretend to any such results. However, amongst a portion of the wounded of the 18th June and 8th September, I found means to make a few statistical observations. The cases may, I think, be fairly taken as a general average, and so far admit of being used to support what is stated above. The joint numbers on the occasions of the assaults on the grand redan, received into one hospital in the field, amounted to 664, embracing all variety of gun-shot injuries, and some of the very worst kind. Of this number of men the average age was 24½. But this statement would only give an inadequate view of the actual youth of a great proportion of them. Sixty-one were *under* the age of 20, of whom one was only 17, and the rest varied between 18 and 19; 75 were *of* the actual age of 20 years. Thus, of the whole, considerably more than one-fourth were actually only 20 years of age and under; 76 were found to be between 30 and 40, inclusive; two were of the actual age of 40; while one was stated to be 48, which is at least doubtful. The remainder, constituting a little more than two-thirds, were of various ages, between 20 and 30, the majority inclining to the former rather than the latter. These results show a very high proportion of immature youth, such as, I have no hesitation in saying, it is not consistent with any sound physiological principles to expose to the severe trials and hardships of actual war. Amongst them, disease finds a rich and easy harvest.

"I would not wish to be understood as implying that any objections exist to the practice of early enlistment. On the contrary, such a

measure is undoubtedly of great general utility. On home service, or on secondary foreign stations in favorable climates, the training and well-regulated exercise of the young soldier conduce to the development of a vigorous frame, and in no small degree add, I am persuaded, to the natural powers of the constitution. Such training should, however, be gradual, and apportioned to the strength of the recruit, according to the earliness of the period at which he is enlisted; and under a properly regulated system, I believe it would not be necessary to fix any precise limits in this direction. Trained at home, and gradually inured to the fatigues of the soldier's life, by a suitable rotation in the selection of foreign stations, troops could, I doubt not, be slowly but steadily brought to a maximum of safe endurance of the hardships of warfare, far above the average of what is now reached. A judicious system of 'cross drafting,' or some such expedient, would enable the younger soldier and recruits of one regiment ordered to the seat of war to be replaced by the more hardy, seasoned, and serviceable men of another; while in the several secondary depôts on the high road to the scene of action, the former could undergo a gradual process of seasoning and acclimatization, which would ultimately add immensely to their actual strategic value and efficiency when called to the field in their turn. In this way, I believe no loss of strength or actual inconvenience to the service could result; while the increased efficiency of a large proportion, probably one-fourth of the forces in the field, would be thus almost certainly secured. I am sufficiently well aware that the employment on active service of the young and immature, prevails largely in other forces besides the English: but I have reason to know that it is with equally unfavorable results. Neither precedent nor practice, however, can be admitted as outweighing the dictates of physiology, and the results of pathological experience, in a matter of such moment. As a conviction based on these considerations, I would beg respectfully to express it as my unqualified opinion, that no soldier under 21 years of age should be sent on service to the Crimea, or any other seat of actual war; and not even then, without a previous training and gradual acclimatization in suitably chosen secondary stations. In the foregoing statements, I believe I am justified in saying, that I express views shared in by a large number of the most able and intelligent medical officers.

"Besides the class of men who, by reason of youth and immaturity of physical development, seemed to suffer peculiarly from the toils of Crimean life, it will be necessary to briefly notice another class equally unfitted to make effective troops, but from a somewhat different cause. I allude to those recruited at a rather advanced age—25 to 30—from the mechanical trades in densely populated towns. Such men have seldom enjoyed a vigorous youth, and even at this age—30—the meridian of their physical development is passed. Ill fortune, or it may be a life of dissipation, has led them to take to arms as a last resource. How far any of such men are capable of becoming efficient soldiers, I know not; but it is certain that the testimony of medical officers bears me out in the observation, that they are constant and early applicants for admission into hospital, their constitution, never robust, soon giving way under exposure and fatigue. Men of such a class may add to the numerical, but never to the effective strength of an army; and it is more

than doubtful if they ever repay the labour and cost of their transport, and of their maintenance in the field or secondary hospitals. One sound, seasoned, and effective soldier, outweighs in value any number of immature and inefficient youths or effete adults. And in the physiological economics of an army, the maintenance of the largest number of effective men is the great problem.

"The several agencies just considered, many of them continuously in operation, and others, though ceasing to be immediately felt, leaving well-defined impressions behind them, had induced sensible modifications, as I have already said, in the constitution of the soldier. Some of these effects were visible to the eye. A marked characteristic of the Crimean soldier was a premature appearance of age. The veteran of 40 would be readily taken, by the inexperienced, for the old man of 60 to 65. The youth of 20 to 22 wore the settled aspect of 35 to 40. With the haggard features of disease, especially that of a chronic kind, these appearances became still more exaggerated, often to a most marked degree.

"Even with those who possessed a still robust exterior, and all the apparent physical conditions of health, the manner in which their system was observed to behave under the influences of disease, or the effects of injury or operations, showed that the force of the constitution was to a very considerable extent deteriorated. To express this in another way, it may be stated, that the available *vis vitæ* for the resistance to, or recovery from disease, or for the resistance to, or recovery from, the effects of injury, or of great surgical operations, was below the average physiological standard. The powers of the system, and consequently the *viability*, so to speak, of the soldier, were below par. This was especially manifested in some of the prominent and distinctive characters of prevailing diseases which presented a decidedly low adynamic, and often typhous type, and such as urgently called for a generous and stimulant treatment.

"It is all but impossible to realise for the soldier in the field the same conditions of life, or the comforts he enjoys on a home station. Many peculiarities, privations, and irregularities, independently of necessary fatigues and exposure, must attend camp life. The constitution is highly impressionable, and readily acquires morbid peculiarities; and from the various concurrent causes which had prevailed in the army of the East, and from the lowered tone of constitutional powers already alluded to, the system of the soldier had become prone to the influence of certain pathological types to a greater or less extent. Some diseased constitutional states seemed to prevail, even independently of the actual development of cognisable lesions, with definite anatomical seat. Foremost and most remarkable, as well as perhaps important, amongst this class of morbid conditions, is to be reckoned the scorbutic dyscrasis.

"Well-developed cases of scorbutic and allied forms of disease, such as purpura hæmorrhagica, were, at the date of my arrival in the Crimea, of comparatively rare occurrence amongst the English troops; while, in the neighbouring allied camp of the French, these affections still prevailed to a considerable extent. The continuance of these diseases in the French army at this period, did not seem to be attributable to deficiencies of vegetable diet. It is now well known that this class of affections does not recognise any such limited or exclusive cause. They are known

to occur amongst masses of men, in whom the vital stamina have been impaired by any causes, as by the toils of many campaigns; and in accordance with this view, I learned that cases of scorbutus were sufficiently common amongst those veterans of the French army in the Crimea who had served with such distinction in the campaigns of Africa.

"Uniformity of diet, when it amounts to a monotony inconsistent with the well-being of the digestive system, is perhaps, almost as fully operative in the production of scurvy, in some of its forms, as an actual deficiency of any single requisite ingredient of the soldier's food.

"Having had the fullest opportunities of becoming thoroughly acquainted with all the essential features of disease as presented in the English camp, I can safely say, that during and subsequent to the month of June of the past year, cases presenting any marked development of scorbutic lesion, as a primary and essential disease, were of the greatest rarity. Some few such I have seen, but they were, undoubtedly, exceptional. But I have not the less reason to believe that, to a considerable extent at least, a general scorbutic state was recognisable in the constitution of the soldier, which, though it seldom led to the actual development of scorbutic lesions of a primary, independent form, lent a decided influence to, and even sometimes distinctly modified, the characters of the other diseased processes which were so commonly prevalent. In more precise terms, it may be stated, that while scurvy did not, except in rare cases, exist in any form as a distinct disease—and while, from the month of June, no single fatal case came within my sphere of observation in the English hospitals, in which scorbutus was the direct cause of death, many cases of disease occurred, in which modifications attributable to a prevalent scorbutic dyscrasis could be recognised; such as various discolorations of the extremities externally, hæmorrhagic effusions internally, and the very remarkable, and as yet unexplained, phenomenon of hæmeralopia. On post-mortem examination, several of such cases, besides the ordinary lesions of the dominant disease, exhibited anatomico-pathological characters, such as mucous hemorrhages, and submucous blood extravasations, which were, in all probability, referable to the scorbutic dyscrasis, as their immediate cause. Of the independent existence of scorbutic lesions at an earlier period, I wish to express no doubt; but I speak here of what came directly under my own observation.

"The next great morbid constitutional state which deserves attention is the Typhous.

"Very numerous, varied, and ill-defined significations attach to this word. I would be understood to use it at present, not in the sense in which it implies special diseases, but for the purpose of designating by it a certain generally prevailing morbid state of the constitution, which determines, in any given essential disease, or any special pathological lesion, when actually called into existence, the marked and peculiar clinical characters which, by universal concurrence of interpretation, are known as typhous. I employ the word, in its comprehensive and generic sense, to embrace as well the phenomena called *Typhoid*, as the *Typhous* proper. That some general constitutional state, brought about by various influences, did exist, and manifested its influence from time to time, in the determination of the characters of disease, I think there is every legiti-

mate reason to believe. Circumstances being the same, disease at one time presented acute, sthenic, inflammatory characters; at another, and far more commonly, its phenomena tended to a low adynamic form.

"Of the diseases prevalent in the forces in the Crimea, during the period of my observations, the majority presented undoubtedly low adynamic—in other words, typhous characters; and this will be found to have been true, not only of the essential diseases, as fevers, but to have been all but constant with regard to many other diseased processes. Acute inflammatory diseases were exceedingly uncommon. I have myself not witnessed any such, and the highest *tone* of symptoms which I have at any time determined to exist, would not, in my opinion, admit of being classed as other than *sub*-sthenic and *sub*-acute. As usually manifested, however, the *tone* of diseased action was much lower, and either verged on or actually exhibited the low typhous adynamic types; and such, as it appears to me, was the class of diseases commonly presented. This type of disease plainly indicated, and as urgently called for, a liberal, generous, and stimulant treatment, often requiring the bold and unsparing use of wine and brandy. To the experienced clinical physician, these well-known pathological indications as clearly and unmistakeably precluded the idea of antiphlogistic and depletory measures, which must be regarded under such circumstances as worse than useless; for, in many instances, they would not have been devoid of danger to life. I have great pleasure in here offering my humble testimony to the generally just and intelligent views of the great majority of the medical officers of the army of the East on this vital point in pathology, and its immediate practical bearing. Few of those who possessed the requisite experience of disease failed to seize readily its great characteristic features, and its manifest disposition to typhous forms. It is needless to add, that their practice was most properly, and I have reason to believe, in many cases at least, as successfully regulated in accordance with these views, which indicated a generous, and often in the worst cases, a highly stimulant treatment.

"While anxious to avoid even the appearance of an approach to controversy, I cannot help, in connection with so important a subject, expressing my entire and most unqualified dissent from certain pathological views and principles, and the applications to the treatment of disease in the English forces, which necessarily and directly grew out of them, and which were as directly or forcibly urged by authorities of eminence resident in Constantinople. That the principles urged by these distinguished persons were, in all probability, true in their application to the class of disease ordinarily presented to their observation, I am free to admit. That the type of disease now and of late years prevalent in these parts of the east of Europe differs materially from that exhibited in the west, is not only possible, but likely. Furthermore, I am prepared to believe, that residence in the midst of Eastern influences will, after the lapse of even a few years, induce marked constitutional changes in the system of the Western European—changes which are followed, as a natural consequence, by modifications in the types of disease when it occurs, and which both clearly indicate and require corresponding modifications in the medical treatment which they call for. It is far from improbable that types of constitution, and, as a consequence, types of disease, un-

dergo great, varied, and extensive modifications, not only in different climates and latitudes, but even within the same climates and latitudes at different times. And, perhaps, more in this than in any of the supposed extraordinary advances in the practice of the healing art, is to be sought the explanation of the opposing views as to pathology and treatment of apparently the same disease, at different times and in different places. Certain it is, such views as to possible modifications of disease, both as to time and place, have been too much kept out of view. Be this as it may, however, to the experienced clinical physician, the characters of the typhous type were too well evidenced in the diseases of the English army during the past campaigns, to admit of doubt as to the pathological views to be entertained, or the appropriate treatment to be adopted with regard to them. What the tendency of the diseased types, and the essential pathological phenomena of the same army in subsequent campaigns, may be, I am by no means prepared to state. To the closely observant eye, an elevation, slow, gradual, but distinctly sensible in the general type of the constitution of the soldier, with corresponding, though slight modifications of the phenomena of disease, when induced, did not fail to make itself evident, even before the termination of the past year. And I am ready to admit it as possible, that the pathological views of the Constantinople observers may be as applicable, in their full force, to the diseases of this same army in some future campaigns, as they were in the past campaigns wholly inadmissible.

"The observations here adduced are in great measure confirmed and supported by those of several accomplished observers amongst the French and Sardinian medical officers. The latter, especially, had noticed as a result of even a comparatively short exposure of the troops of Piedmont and Savoy to the influence of the Crimean campaigns, a decided though slight depression of the constitutional tone of the men; and not only a less urgent demand for, but a less tolerance of, antiphlogistic measures of treatment, especially the depletory. In a more general, but not less important way, the experience of the French hospitals in the field bore out the conclusions derived from the study of the characters of disease amongst the English forces in camp. The French troops had, it will be remembered, been exposed to all but the same influences as the English.

"Of the two chief pathological states which may be grouped under the head of Typhous, I must now treat somewhat more particularly. They constituted, perhaps, the gravest forms of disease which extensively affected the troops. The typhous proper and the typhoid, as essential diseases, allied as they undoubtedly are, yet presenting important differential characters, stand pre-eminent amongst the fevers which have made ravages on the armies of the East. I shall not here enter into any discussion as to differences between these two types of disease. I use the terms in a sense the same as that which is a pretty general conventional recognition of their chief differential characters as assigned to them. Of the precise nature of the diseases treated of, the very full anatomico-pathological details which will be subsequently communicated will leave no doubt. Of the typhus proper, the true spotted or petechial fever, I have determined the existence in the hospitals of the East by some few but well-marked and unmistakeable cases. But it would appear not to have been by any means so general, nor to me does it seem to

have been of such importance, as the typhoid. This latter form of fever prevailed to a very considerable extent, and at times in a type of the gravest kind. Occurring in constitions already depressed below the physiological standard, it is not to be wondered at that it frequently proved fatal. It is not, however, in its more immediate effects, perhaps, that its most formidable characters are to be sought.

"Fevers of this class, as it is well known, exhibit a marked tendency to secondary complications in vital parts; and this, apparently, by reason of some cause, as it were, natural to the order of morbid actions which they embrace. Several causes foreign to such fevers likewise concurred to determine the all but constant occurrence of one class of internal lesions; those, namely, of the abdominal organs. From both influences combined, doubtless, the secondary enteric lesions, which this order of fever induced, were of the severest kind. They were all but universally attendant upon it, and were usually of a markedly fatal character. In the typhoid fever of the Crimea, it was especially noticeable that a convalescence, more or less apparently complete, often occurred after the subsidence of the primary disease, before the development of any secondary lesion was manifested by appreciable signs. Such periods of convalescence, it must be observed, did not always occur, for the primary symptoms not infrequently passed into those of the secondary affection, with scarcely any sensible intermission. The cases assumed, it may be, a more low and lingering character, and terminated in some one of the forms of fatal issue common in this disease. Convalescent intervals, with apparent though fallacious restoration to health, did, however, sufficiently often occur, and in many instances to such an extent, as apparently to warrant a return to duty—a circumstance almost constantly fraught with increased danger to the patient. The great danger to life involved in these secondary enteric lesions, which so often lead to slow, lingering illness, with its attendant diarrhœa, wasting and gradual exhaustion of the patient, with sometimes an end of pain and misery, as when they issue by intestinal perforations, is a well-established fact in pathology. And when a fever, prevalent among masses of troops, is ascertained to present any tendency to the development of such lesions, the greatest circumspection is called for amongst those intrusted with the charge of such cases. During convalescence, however well established to all outward appearance, the utmost restrictions should be placed on the diet and drink of the patient. He should be kept under constant observation, and, if circumstances admit, transported carefully to some secondary hospital for convalescents. And till such time as he may be fairly considered beyond the danger of the possible induction of the insidious disease which he inherits, as it were, from the primary affection, he should be strictly treated as still, in all respects, in *statu ægri*. The neglect of such precautions would, I believe, be found to lead to the loss of many valuable lives. It is with regret I have to say, that it does not appear to me that the principles which furnish indications of such importance as these, are sufficiently known and properly recognised.

"Of the various causes operating in the production of disease amongst the troops in camp, the greater part tended undoubtedly to the development of morbid action in one part of the system more especially; and this almost to the exclusion of affections in other organs, at least in a

primary form. The abdominal viscera were those in which disease was most commonly manifested. Physical causes from without, and irritation established within, in some measure at least, connected with peculiarities of life and diet, led to a prominent tendency to gastro-enteric derangements, and the consequent development of the diseases known as Fluxes, in their various forms. It may indeed be said, that the main features of the pathology of the disease, as presented in the army of the East, were embraced in the two great classes of the fevers and the fluxes; and of the latter, no inconsiderable proportion owed their origin to the former. Ample proofs will be found, in the various following sections of this report, of the extraordinary predominance of abdominal lesions. To such an extent did they prevail, that I believe I shall be warranted in stating, that in no case submitted to examination by me or my assistants has a perfectly normal state of the digestive viscera been found to exist; while a marked absence of lesions in other parts was, in those who died in the early periods of disease or injury, the general rule.

"Amongst the several diseased processes attended with one or other of the forms of flux, that connected with the development of enteric lesions, secondary to the variety of fever already considered under the name of typhoid, deserves most especial attention for reasons already adduced. It seems, however, to have been not unfrequently confounded with other, and often less important affections, under the ill-defined head of 'diarrhœa.' Evidence bearing upon this point will be found throughout the body of this work. I would only further venture to remark, in reference to it at present, that this branch of diagnosis does not seem to me to be in such a position as its importance demands for it.

"As I shall subsequently have occasion to show, dysentery formed by far the greatar part of the true fluxes which so largely affected this army. In its chronic forms, it was a lingering, wasting, and almost constantly fatal disease.

"When established as a chronic disease, dysentery evinced a marked tendency to the induction of other morbid states in the system. The most complicated forms of diseased action, and those presenting the most profound disorganization of vital parts, have been illustrated by dysentery in certain orders of morbid association: in one, in connection with the typhoid state, either as an antecedent or a consequent; in another, in connection with the development of tubercle; and in a third, with the development of both these processes in a more or less advanced degree. But the discussion of the details of such cases belongs to the domain of special pathology.

"I have before alluded to the comparative immunity from diseases of the respiratory organs enjoyed by the soldier in the Crimea. This is to be understood as referring to the primary and idiopathic forms of these affections; for, as will be evident in the details of cases subsequently given, extensive secondary diseases of the lungs have been all but constant, as the result of the typhoid and the dysenteric processes, more especially when in the chronic state.

"As a cause influencing the nature and results of disease to an important extent, I cannot omit alluding to the subject of deportation of the sick.

"Of the various diseases existing in camp, a broad practical distinction

into two great classes presented itself, in a medico-economic point of view,—namely, first, into those which were characterised by a uniform determinate course, of longer or shorter duration, and with a definite primary issue in death or recovery; and secondly, into those in which, after the primary phases of morbid action had been brought to an end, the system was still under a dominant morbid influence, liable to the invasion of important, often fatal, secondary diseases, as an almost direct consequence of the primary affection, though, in many instances, periods of complete intermission occurred. In the former class were to be ranked the simpler fevers, the uncomplicated forms of diarrhœa and dysentery, and such cases of acute or sub-acute idiopathic inflammatory affections of isolated organs, as, though exceptional, were found to exist from time to time. In the latter group were included, in a general way, almost all other diseases, whether fevers or fluxes, witnessed in camp. I may, however, especially mention relapsing fevers, those of the typhoid type, with tendency to the development of secondary enteric lesions, any such few independent forms of enteric disease as may have occurred, and all the forms of chronic dysentery which presented disposition to complex morbid associations, especially with the great dyscrasic types, as scorbutus, tuberculosis, and typhoid disease.

"It is not in a scientific point of view that such a broad division of disease is most worthy of attention. Certain medico-economic considerations of great practical moment arise out of it; and it is because it has seemed to me that such indications have not received that recognition which they are entitled to, that I venture to bring them into notice at present. It will need little reasoning to show that diseases having a tendency to determine issue in the primary stages should be treated *in loco*, having due regard to the place of their occurrence, and the possibility of requisite accommodation being found for their reception and cure. The same applies to the second great class during their acute stages. It is not necessary to point out the impropriety, and often even fatal effects liable to result from the deportation of disease in an acute form, either by land or sea, to any considerable distance. Yet neglect of this principle has led to very unfavorable results. With regard to the second great class of cases, with tendency to secondary disease subsequent to a primary attack, removal from the morbid influences in which the disease has originated, and which are capable of determining its further development, rest from all duties and fatigues, with strict attention to diet, are absolutely essential. Such conditions as are here implied can be only adequately realized in the great secondary hospitals.

"On the principles here indicated, there is good ground for believing that a large and timely extension of the system of sick and convalescent leave would be attended with marked beneficial results, and would, doubtless, restore to a state of efficiency for active service many valuable lives. It has not appeared to me that such a system has been followed to the extent that would be requisite, and which could be readily accomplished.

"I have already informed your lordship, that on the occasion of the 8th September, in the illness of some, and absence on sick leave of others of the medical staff, I had the honour of lending my services to the care of a considerable number of the surgical cases which that event

produced. It is likewise, doubtless, known to you, that a large proportion of operations was performed by me on that occasion.

"The pathological phenomena exhibited in the sequence of mechanical injuries from the various forms of projectiles, or developed as a consequence of surgical operations, presented, in very many instances, features of remarkable interest. An attentive study of the pathological conditions thus brought into existence will be found of value, not only because they constitute in themselves important subjects of scientific inquiry, but also because they tend to throw light on the states of constitution in which they themselves became manifested, and to which, in all probability, they owed their origin. When elucidated themselves, they became, as it were, so far, fixed pathological standards, and then, in their turn, admitted of being used to estimate the nature and degree of the deviations from the normal physiological status of the system in which they occurred. In this manner it will be subsequently seen, that though, on the whole, the general results have been satisfactory, a consideration of the pathological conditions presented as the sequence of injury or of surgical operations, leads to the estimation of very grave and important aberrations from the physiological standard in the constitution of the soldier. So far the indications furnished by surgical, corroborate those derived from medical pathology. As a general rule, though no epidemic morbid states prevailed, low forms of diseased action attended the graver surgical cases. Destructive processes were often exhibited in limbs after the operation of amputation; and only very moderate success has been obtained in this class of operations.

"In connection with this subject, some notice must be taken of marked constitutional effects, in all probability due to the excessive and habitual use of intoxicating liquors. Testimony has been elsewhere borne, and very properly, to the general abstemiousness of the soldier during a part of the past campaigns. It was with regret, however, that I noticed, subsequent to the month of May, that the increased facilities for procuring malt and other intoxicating liquors became a means of great and general abuse. Habitually employed, even in not excessive quantity, I am far from agreeing with many that porter constitutes a perfectly healthy ration for the soldier. Immoderately used, it leads to an inflation of the system, and a plethoric state not consistent with a firm and vigorous health. Certain it is, that men presenting these fallacious appearances of strength, often presented rapid, low, and fatal forms of disease, and quickly succumbed under the effects of injury or great operations. However robust in appearance, they were far from being in a normal state. Proofs of the truth of what is here advanced will be found in a proper section hereafter.

"It will be interesting to notice here, that a tolerance of the effects of injury, and of the greater surgical operations, has been observed amongst the Russian prisoners, both in the French and English hospitals, far superior to that exhibited by the wounded amongst the allied troops, with the exception, perhaps, of the Sardinians.

"In a very considerable proportion of the Russian prisoners who came under my observation, the physical development of the frame seemed to be that best suited for the safe endurance of the hardships and fatigues of warfare. The muscular system was well developed, vigorous, and

firm, with the adipose tissues at a minimum. Their frames were, in fact, 'hard,' 'firm,' and in thorough working order; and, in this respect, contrasted forcibly with the 'soft,' inflated, though apparently stalwart systems of some of her Majesty's troops. I regret extremely that my opportunities for investigating the physiological and pathological status of the Russian troops were not sufficiently extensive to enable me to communicate any definite results on these subjects.

"In the primary forms of disease, as observed in camp, lesions of the abdominal organs have been stated to have been the great characteristics; and, while in their early stages, such lesions commonly existed isolated. When, however, disease assumes the chronic form, complexity of diseased processes became manifested. This latter tendency—namely, that to multiple associations of morbid actions—was, perhaps, the greatest point of difference which existed between disease as it occurred in the hospitals of the camp and in those of Scutari. In the latter place, chronic disease was the rule, and, so far, complexity of lesions and of diseased processes was to be expected. A tendency to the development of dyscrasic states, especially that of tubercle, in association with chronic disease, was, moreover, largely manifested in the secondary hospitals of the Bosphorus. Though I have not failed to observe some cases of similar complex affections among the sick in camp, they were undoubtedly of rare and exceptional occurrence in the hospitals in the field.

"In the several following sections, the results of the investigations undertaken by myself and my assistants, will be found detailed. I have held it in view to endeavour to give such descriptions of disease and diseased processes presented to us, as will enable them to be recognised and identified in the fullest manner at any time, or for any purpose. In some instances, it has been found necessary to go into considerable detail to furnish the requisite data for estimating the characters of the diseases observed by us. But it is not to be expected, that in a work of this nature, or within the limits of time and space properly assignable to a report, the various important pathological subjects which we shall have to pass in review could receive that complete and elaborate discussion which, under other circumstances, would be demanded for their full elucidation. To elaborate the numerous details of our investigations, and to show their full bearing on medical and surgical pathology, would have required, for its accomplishment, as many months as we have been enabled to devote weeks to this work. Such as it is, however, I trust that in this report the chief outlines of the pathology of the diseases of the army in the East will be found considered with sufficient fulness for the purposes of the inquiry.

"I cannot close this section without bringing to your lordship's notice the services of my first assistant, Dr. Wm. Aitken. To his zeal and energy, his discretion and judgment, under circumstances of no ordinary difficulty, I am greatly indebted. And to his ability as an investigator of disease, much of the results of this inquiry are largely due.

"I have the honour to be, my lord, your lordship's obedient servant,

"Robert D. Lyons.

"*The Right Hon. the Lord Panmure, G.C.B.*"

Aperçu du Système Spinal ou de la série des actions réflexes dans leurs applications à la physiologie, à la pathologie, et specialement à l'epilepsie. Par MARSHALL HALL. (Paris, Victor Masson, 1855, 12mo, pp. 246.)

The principal object of this work is to set forth tracheotomy as the remedy in laryngismus, and with this view several cases are appended in which the operation has been performed. There is nothing new for us on this side of the water; indeed, Dr Hall tells us in his preface, "*il n'a rien à y changer*," and as there is nothing new, we find no reason to modify the opinion we have already expressed in these matters. We greatly admire, however, the versatility of talent and the energy of character which have prompted Dr. Hall to communicate his views to our noble allies, the French, in their own language.

Outline of a Hygyenic Code for the treatment of Consumption. By BENJAMIN W. RICHARDSON, M.D., Physician to the Royal Infirmary for Diseases of the Chest. ('The Journal of Public Health,' October, 1856.)

In giving the following rules, Dr. Richardson presupposes their general applicability to cases of consumption in all stages of the disease: in the premonitory stage; in the stage where the tubercular deposition is apparent; and in the next stage, when the local mischief is much further advanced. In the last stage even, though hope is lost, many of the rules may still be rigidly followed out with advantage, for by them the course of the disease may be smoothed, and life, perhaps, prolonged.

The Rules are ten in number.

RULE 1.—*A supply of pure air for respiration is the first indication in the treatment of the consumptive patient.*

No cozy room with a temperature at 70°, with every crevice closed, and with an atmosphere in a dead calm and laden with impurities, should be permitted. A temperature from 55° to 65° Fahr. is high enough. The fire, if one be wanted, should be in an open grate, and every arrangement should be made by which the freest possible current of air should be kept circulating through the room. If the patient is cold, he must go near the fire, and, if necessary, poke it, but he must on no account make the room warm by making it close. Dr. Richardson objects very strongly to stoves of all kinds, to heated pipes, and to every other mode of supplying warmth, except an open fire, as by these means the air is made too dry. Among other disadvantages attending the inhalation of a too dry air, is hæmoptysis, and a case is mentioned in point. "A gentleman whom I knew, and whose lungs were free from tubercle and other organic disorder, was constantly annoyed and troubled with slight attacks of hacking cough and blood-spitting. He was

at a loss to account for the cause. At last he detected that the attacks always commenced when he was at work in his study. With the idea of being very warm and comfortable, and ignorant of the nature of animal heat, he had introduced into a small room a large Burton's stove. To a stranger entering that room when the stove was in action, and the doors and windows snugly closed, the heat and dryness of the atmosphere would have been at once oppressive; but he, a close student, and constantly occupying the room under such conditions, had become accustomed to it as regards external sensation, but caught the mischief effectually in the chest. The cause of the symptoms being explained, the stove was abandoned, and the open fire-grate was again resorted to: the cough and blood-splitting at once disappeared without the administration of any medicine. A few weeks afterwards, thinking that the stove and the cough might only stand in the position of coincidences, our student resumed the use of the stove; and what is more, resumed also, as an effect, the cough and the blood expectoration. This time he became assured that the stove and the cough stood in the relation of cause and effect. The cause was once more removed, and ever since he has remained free of the effect." Free ventilation is especially neccessary where gas is used. The bedroom should be large—including, if practicable, not less than 1000 cubic feet of breathing space; and, to prevent any unnecessary contamination of the air, no second person should sleep in the same room, and no light, particularly gas, should be burnt through the night. Two persons in one bed, according to Dr. Richardson, are out of the question under any circumstances. The inclemencies of the weather are not so much to be dreaded as confinement to the house. "I had occasion, some time since," says the author, "repeatedly to remark that if, from a few days' rain, the consumptive under my care were confined to their houses, instead of being able to take the daily out-door breathing always prescribed, the aggravation of symptoms was always marked and universal. The appetite fell off, the debility became greater, the mind was less buoyant, the local mischief increased." Better go out with respirators and mufflers, under ordinary circumstances, than stay in. A muffler, which a patient may make for himself for a few pence, being as good as an expensive respirator. This is made out of a piece of fine wire gauze, cut oval, so as to cover the mouth and nose, and fixed in the centre of a handkerchief, so that it may be tied on like an ordinary comforter, with the gauze in the centre, for breathing through.

The want of pure air is thought to be an objection to hospitals for consumption. Dr. Richardson admits "that a vast deal of good is, or may be, done at these institutions by the treatment prescribed by the physicians who attend at them, and whose lives are devoted to the study of the disease, there cannot be a doubt. But that it is either physiological, or sound practical treatment, to receive into these buildings consumptive patients, is an assumption I must most earnestly dispute. I know the excellent spirit in which institutions of this kind are founded. I am fully aware of the care that is bestowed on the inmates; of the attempts that are made to introduce every hygienic improvement; of the order and cleanliness that prevail; of

the kindness of the attendants; of the excellence of the diet-roll; and of the skill of the physicians. With all this, it is to me as clear as crystal, that to bring phthisical patients into such institutions is a great charitable mistake. The very care, and waiting-servant attention, that is paid to such of the invalids as are in the first and second stages of the disease, is a cruel kindness. The remedy for them is to encourage and urge them to assist themselves and to exert themselves. Moreover, no kind of hygienic system, carried on in a large building filled with inmates, can make the air of that building in any way equal to the outer air, which it is so necessary that the consumptive person should breathe. Twenty patients, lying in one hospital ward, will throw off per minute into the air of the ward at least three and a half cubic feet of expired and impure gases, rendered in the phthisical the more impure by the pathological condition of the lungs. But the impure air thus exhaled vitiates by its diffusion twenty times its own volume of pure air; so that, in fact, in a ward with twenty patients, there are not less than seventy cubic feet of air spoiled per minute, and rendered unfit for the purposes of life. It may be granted that during the day, when the wards are less full, and many windows are open, and the movements of the inmates are active, the expired air may be fairly disposed of. But take a winter night of twelve hours; consider that in this period of time the twenty patients would, if they exhaled even naturally, vitiate fifty thousand four hundred cubic feet of air, which ought to be removed, and to be replaced by two thousand five hundred and twenty cubic feet of *pure* air for the use of respiration; and then reflect whether it is probable that such a ward can remain during the whole night uncontaminated. For, granting to the twenty patients a breathing space of twenty-six thousand cubic feet, and even then it would require that the whole of the air in that space should be removed and replaced by fresh air fully twice in the one night. Against this, possibly, the artificial ventilating argumentists will urge that such a feat of ventilation is nothing at all, not worth considering, so easy to be done. M. Grouvelle would probably undertake to effect such interchange eight times in the night, or more; and if he undertook to do it eighty times, and did not succeed in doing it once, it might be difficult to prove the fact against him. But if he would take a strip of paper prepared for ozone, place it in a ward, however artificially ventilated, and place another similar paper in the open air adjoining the ward, it is a mistake if he should not find that there was a striking difference in the process of oxidation in the two localities; and that the great life supporter, oxygen, was in a condition to play a very much more active part in its out-door than in its in-door work.

"The misfortune of a great hospital, with all its rooms communicating indirectly with each other, is, that the ventilation is always uncertain. There is, in fact, no properly ventilated space except the great vault of heaven, and no true ventilating power except in the combinations of atmospheric pressure, wind movements, and the force of diffusion.

"If special hospitals for consumptives are to be had, they should be as little colonies, situated far away from the thickly populated abodes of men, and so arranged that each patient should have a

distinct dwelling place for himself. They should be provided with pleasure-grounds of great extent, in which the patients who could walk about should pass every possible hour in the day; and with glass-covered walks overhead, where they could breathe open air, and yet be dry, even if rain were falling. Very expensive such an establishment would be, there is no doubt; but it would, I take it, be infinitely more practically advantageous to treat ten patients in this manner, than ten tens in a confined brick and mortar box, through which of necessity some amount of invisible impurity, some trace of transparent poison-cloud, is constantly floating.

"The strongest argument in favour of consumption hospitals is, that they receive those members of the community who could not at their own homes afford the same advantages as are supplied to them in the charity. Against this it is to be urged that the patients taken into the consumption hospitals are *not*, in this country at least, in any way to be considered as the representatives of the most needy and destitute sections of the community. These latter go to their last homes in the workhouse, or in their own poverty-stricken dwellings. The classes that fill the hospitals are often many grades above destitution; and are sometimes comparative wealthy. They have access to a governor, who gives them an admission letter, and they leave their own medical adviser to enter the hospital, not because they cannot find the means to live at home and be treated at home, but because, catching at every new suggestion offered to them, they set their hearts on getting into the hospital, as though it were a certain haven of rescue. In this scramble after admission some of course succeed; they leave their homes, they enter the hospital, and there the greater proportion of them either die or return back to their friends nearer death than before. A few recover or are relieved; but whether the same result would have occurred, if they had been subjected to the same medical and general treatment out of the hospital—is a question which may be left very safely answered in the affirmative."

Rule 2.—*Active exercise is an essential element in the treatment of consumptives.*

Next to a free exposure to air, Dr. Richardson agrees with Drs. Rush, Jackson, and Parrish, in thinking that vigorous exercise is by far the most efficient remedy in the treatment of consumption. "Walking," he says, "is the true natural exercise, and the best, for it brings into movement every part of the body more or less, and, leading to brisker circulation in every part, causes a more active nutrition generally. The extent to which exercise should be carried will vary with the stage of the disease, and temporary accidents may for the moment stop it altogether, such, for instance, as an attack of hæmoptysis. But when exercise is advisable, the general rule is to recommend that it be carried out systematically, cautiously, and courageously, and that each exercise should be continued until a gentle feeling of fatigue is felt through the whole muscular system. Violent and unequal exertion of the upper muscles of the body is unadvisable. When restored from the fatigue of one exertion, another should be undertaken, and during the day this cannot be too often repeated. If the day be wet, then the exercise should be effected by walking in

a large room, or by engaging in some game, such as skittles, billiards, or tennis.

"If, in his waking hours, the consumptive patient can keep himself occupied pretty freely in muscular labour, he secures the best sudorific for his sleeping hours that can possibly be supplied; for as the cause of force is always expended in producing motion or action, so, to use the words of Dr. Metcalfe, 'the proximate cause of sleep is an expenditure of the substance and vital energy of the brain, nerves, and voluntary muscles, beyond what they receive when awake; and the specific office of sleep is the restoration of what has been wasted by exercise.' Cough is very much less frequent in the course of the night in him who has been subjected to exercise in the day; while sleep, when it falls, is more profound, more prolonged, and more refreshing.

"In summer time, when the temperature of the day is high, the morning and the evening time are the best adapted for the periods of out-door exertion. In the other seasons, mid-day is preferable, as a general rule.

"I have sometimes been asked whether what are called gymnastic exercises are commendable in consumptive cases, and whether swinging is good. My idea on these points is that, in swinging, a person is much more usefully exercised when throwing the swing for his associates' pleasure, than in being himself swung. There is, in fact, but little faith to be placed in so-called scientific gymnastics. Anything that a man invents to overtop or compete with nature must needs be paltry. Brisk natural movement of the limbs is all that the consumptive requires. He need not go out of his way after a sham, in the shape of a shampooer: chopping wood is a good gymnastic feat, and playing at skittles is perfect in its way.

"The value of exercise is threefold. First, it checks waste of muscular structures, for muscles left inactive undergo a consumption, without any necessity for lung disorder. Secondly, it diverts the blood from the lungs, causes a more brisk circulation through them, and a more free distribution through the system at large. Thirdly, it induces a more free respiration; more oxygen is taken into the lungs, the body is restored to its vital purposes more surely, and, just in proportion as this restoration is effected, so is the restoration of disordered function and of disorganized tissue.

"In the performance of muscular exercise let the consumptive never encumber himself, or check the free movements of his body by strappings, loads of clothes, or carrying of weights, and the like. These are but tasks; they lead to unequal exertion in special sets of muscles, and such inequality of expenditure is that which is to be avoided. The treatment of consumption in a hospital is objectionable, again, in regard to exercise. Of what use to the consumptive is an acre or two of airing-ground confined at the back of his hospital? Let him be certain that where the gardener cannot make roses bloom, and peach-trees blossom, no doctor can give to the anæmic cheek a permanent colour, to a lost function its uses, or to an impoverished body its once healthy power.

"A last consideration on the value of muscular exercise is, that it

is eminently useful in keeping the respiratory muscles in a state of active nutrition. For, if to the loss of capaciousness in the lungs to receive air, there is added a daily increasing failure in the muscles by which the acts of inspiration and expiration are carried on, it is clear that a double evil is at work. Now this double evil is most actively presented in consumption. As the respiratory muscles, together with the other muscles, lose their tone, so do the general symptoms of exhaustion increase in severity; sometimes without very marked change in the pathological condition of the lungs. As a sequence, day by day, as the nutrition of these muscles decreases, and as they fail in tonic contractile power, they gain in excitability; so that the irregular spasmodic contractions to which they are subjected in the act of coughing are produced by the merest excitement, and the cough is more frequent as it becomes more feeble."

Rule 3.—*A uniform climate is an important element in the treatment of consumptives.*

No particular place is recommended for consumptives, but here is the formula for an hypothetical consumptive Atalantis. "It should be near the sea coast, and sheltered from northerly winds; the soil should be dry; the drinking water pure; the mean temperature about 60°, with a range of not more than ten or fifteen degrees on either side. It is not easy to fix any degree of humidity; but extremes of dryness or of moisture are alike injurious. It is of importance in selecting a locality that the scenery should be enticing, so that the patient may be more encouraged to spend his time out of doors in walking or riding exercise, and a town where the residences are isolated and scattered about, and where drainage and cleanliness are attended to, is much preferable to one where the houses are closely packed, however small its population may be."

Rule 4.—*The dress of the consumptive patient should be adapted to equalise the temperature of the body.*

Rule 5.—*The hours of rest of the consumptive patient should extend from sunset to sunrise.*

This rule, in Dr. Richardson's opinion, is imperative for many reasons. "First, because in all seasons the actual amount of rest required by the natural man is pointed out with the precision of an astronomical law by the course of the sun. In midwinter men require, for physiological reasons, more sleep than they do at midsummer, and just so much more as is indicated by the difference of night in these two periods. Observe how all animals, left to their own natural instincts, obey this law. Secondly, in our present artificial mode of life, we have to extend the day by the invention of artificial lights. But whenever a man shuts himself up in his closet, and makes a little sun out of his gas-lamp or candle, he is feeding that lamp with a part of his own breathing store—the air around him. Worse still, the candle can, no more than the man, live alight without exhaling carbonic acid gas, and thus vitiating the atmosphere. A pound of oil burnt in a lamp produces, in burning, nearly three pounds; and every cubic foot of coal gas, rather more than a cubic foot of carbonic acid. The evil effects of carbonic acid on the lungs have been already described. Thirdly, as an artificial light is, by the mode in which it

is produced, of necessity injurious, so, on the contrary, the pure sunlight is of the greatest worth in the acts of vitality. What sunlight does in a physiological way is undetermined; but its general influence has long been known and recognised. Plants banked up from the light become blanched, and human beings kept for a long time in dark abodes become the victims of anæmia and scrofula.

"Thus, to fulfil the natural law regulating the times of sleep, to escape from the artificial light, and to obtain the advantage of all the sunlight that can be secured, the consumptive patient should make the sun his fellow workman." But is not this going a little too far? Must the consumptive patient remain eighteen hours in bed in the shortest days of the year, and keep out of bed for the same period in the longest days? and ought the valetudinarian Laplander to remain in bed during his long winter, and to keep up throughout the entire summer? Surely not; and yet, upon this principle, he ought to have no alternative.

Rule 6.—*The occupation of the consumptive patient should be suspended if it is in-door or sedentary; but a certain amount of out-door occupation may be advantageous.*

Among other remarks which naturally arise when speaking upon a rule such as this, is one which deserves considerable attention. It is this: "In the case of parents having children of a consumptive tendency, therefore, the greatest care should be taken to obtain for them out-door employment. But here a serious delusion comes into play. If the child is weakly, the fond parent urges, that it is unfit for hard labour and for out-door vicissitudes; so it is sent to a tailor or shoemaker, to a clerk's office, a draper's shop, or to some occupation of an in-door character; by this grand, ignorant, and fatal mistake, it is added to the list of the two-thirds who swell the tables of consumption cases."

Rule 7.—*Cleanliness of body is a special point in the treatment of consumption.*

Rule 8.—*Marriage of consumptive females for the sake of arresting the course of the disease by pregnancy is morally wrong, and physically mischievous.*

Rule 9.—*The diet of consumptive patients should be ample, and should contain a larger proportion of the respiratory elements of food than is required in health.*

Rule 10.—*The medicinal treatment of consumption should in the main be of the tonic class.*

There is no doubt, as Dr. Richardson says, that the public expect to be cured by pills and plaisters, and not by a series of instructions tending to bring men into obedience with the laws of nature, and therefore much credit is due to him for constructing this sanitary decalogue, even though subsequent inquiry may lead him to modify some of its articles.

A practical Treatise on Disorders of the Stomach with Fermentation; the causes and treatment of Indigestion; and on Diet. By JAMES TURNBULL, M.D., Physician to the Liverpool Royal Infirmary, &c. (8vo, London, Churchill, pp. 160, 1856.)

Dr. Turnbull holds that diseases of the stomach, arising from fermentive actions, form a much larger and more important class than is generally believed, and that, in fact, fermentive actions have more or less connection with almost all the disorders, as well as the organic diseases, which occur in the digestive canal; and his object in the present volume is to establish this idea.

This object is carried out in six chapters. In the first chapter, the author considers natural digestion, and endeavours to point out how far we have reason to believe that fermentive actions are concerned in the healthy process.

In the second chapter, he examines the chemistry of eight of the different kinds of fermentation—namely, the saccharine, the vinous, the viscous or mucous, the lactic, the butyric acid, the acetous, the benzoic and caseous, and the fatty; and after this, he states the results of his researches as to the effects of certain chemical agents in arresting fermentive actions. These results are at once interesting and important. "A boiling temperature," the author proceeds, "puts a complete stop to every kind of fermentive action. The ferments, being all of a nature more or less nearly allied to albumen, are coagulated at a boiling temperature; and it is believed that the change thus produced on the ferments is the cause of the complete stoppage of the fermentive action, which is not renewed so long as the atmosphere is excluded. On this principle it is that meat may be preserved from putrefaction for years, by being sealed up at a boiling temperature, so as to exclude the air perfectly. On the other hand, it has been thought by some scientific observers, and not without some apparent foundation, that boiling arrests fermentation by destroying the germs of microscopic plants and animals. To this point, however, we shall have occasion to revert. Dryness and a freezing temperature are other agencies which oppose fermentive actions.

"There are many chemical substances which have the power of checking or completely arresting fermentive actions; and as a considerable number of them are much in use as medicines, it must be obvious that it is a matter of some importance that medical men should be aware of their power of checking those actions which, we have seen, perform a part both in healthy digestion, and in producing abnormal digestion or dyspepsia. It is, however, to be regretted that this subject has not yet received the close examination from scientific and practical chemists which it merits, and that so little is yet accurately known of how most chemical agents affect the various fermentive actions. In dealing with this subject, I shall first state what is at present known in reference to it, and afterwards advert to a few facts which I have ascertained from my own researches.

"Sulphurous acid and its salts the sulphites have been regarded as

amongst the most powerful agents in stopping vinous and other fermentive actions, and they are also powerfully antiseptic. The vapour of burning sulphur is not only a disinfecting agent, but it is also diffused through casks to prevent acid fermentation in cider and other kinds of fermented liquors; and it has been supposed that it acts by combining with oxygen and abstracting it from the ferment. The bisulphite of lime is a soluble salt which is a very important chemical agent in the manufacture of sugar from beet root, being used to prevent fermentation, and the formation of acid, in the sweet liquor obtained from this root. Sulphuric acid, and also the other mineral acids, have considerable power in opposing fermentation. Alcohol and wood spirit arrest fermentation and destroy the active power of yeast; the former, it has been said, acts by abstracting water from the ferment. We have already seen that the alkalies act chemically on some ferments, dissolving yeast; and they, as well as nitre and common salt, have antifermentive powers. Many metallic salts coagulate albumen, and most of them check fermentation, more especially the salts of mercury and copper. Tannin and alum, by coagulating the ferment of mucous fermentation, arrest this kind. Chlorine and chromate of potash oppose fermentation; and it has been stated that arsenious acid and corrosive sublimate kill fungi and infusoria, but that nux vomica destroys the latter only. The oil of turpentine, and the essential oils generally, oppose fermentation; but those more particularly which contain sulphur have decided antifermentive properties, as, for instance, the essential oils of mustard and horseradish. Creosote coagulates albumen, and is a powerful antifermentive and antiseptic agent. Pyroligneous acid, and most empyreumatic substances, seem also to have the same properties; and hence wood which has been charred is in a great measure preserved from decay. The antiseptic properties of charcoal are also well known; and in the quick vinegar-making process, by which the alcoholic vapour is oxygenated by being made to trickle through shavings of wood and twigs, any charring of these prevents the formation of the acid. The antiseptic agents which act most powerfully in preserving wood from decay, are corrosive sublimate and the sulphate and the chloride of copper.

"With the view of testing the action of some of these antifermentive chemical substances, I have made a few experiments on the effects of these and some others, used medicinally, on the vinous and on the lactic fermentations. On the vinous I have tried the effect of the following agents, viz., sulphurous acid, sulphite of soda, prussic acid, sulpho-cyanide of potassium, sulphuric, hydrochloric, and arsenious acids, common salt, chloride of lime, solution of chlorinated soda, carbonate of soda, lime water, alum, bichloride of mercury, chloride of zinc, sulphate of copper, sulphate of iron, nitrate of silver, trisnitrate of bismuth, chromate of potass, tannin, gallic acid, mustard, horseradish, garlic, assafœtida, oil of turpentine, opium, strychnine, alcohol, wood spirit, creosote, and charcoal. Some of these agents completely put a stop to all fermentive action; others appeared to check it in a slight degree; and one or two seemed to increase it, more particularly alum. This salt also rendered the barm of lighter colour; and hence its use by bakers to make the bread more spongy

and of lighter colour, in doing which I doubt if it has the deleterious effects so generally attributed to it, as alum is not itself deleterious, and bakers' bread is usually the lightest and most easily digested.

"The substances which arrested the fermentive action in the most decided manner were, the bichloride of mercury, nitrate of silver, sulphate of copper, chromate of potass, carbonate of soda, mustard, horseradish, wood spirit, prussic acid, and creosote. These seemed to have the power of entirely destroying all fermentive action. Turpentine, assafœtida, and chloride of lime, weakened it very much, but without so completely destroying it. Sulphurous acid and the sulphite of soda appeared to be less powerful antifermentive agents than those just mentioned; and the sulphuric and hydrochloric acids rendered the fermenting fluid clearer, without decidedly lessening the fermentive action, except when added in sufficient quantity to render the fluid decidedly acid to the taste. Tannin caused the precipitation of the ferment, and the absence of any head, but without arresting the fermentation; and gallic acid, on the other hand, caused an abundant dark-coloured head. No very decided effect seemed to be produced by arsenious acid, chloride of lime, sulphate of iron, charcoal, strychnine, or opium. Garlic, the strong smell of which is due to an oil containing sulphur, did not weaken the fermentive action, as has been generally supposed, but, on the contrary, seemed rather to increase it.

"The effects of chemical agents on the lactic fermentation are not so readily judged of as those which are produced on the vinous. With the view, however, of testing the effects of some of the same agents on this kind of fermentation, I placed a saccharine solution, containing decomposing cheese, at a suitable temperature, with the following chemical substances, in separate vessels, viz., with bichloride of mercury, sulphite of copper, mustard, creosote, wood spirit, sulphate of soda, sulpho-cyanide of potassium, sulphate of iron, common salt, alum, tannin, arsenious acid, and charcoal powder. As the lactic fermentation advanced, the fluid lost the disagreeable odour of decomposing cheese; but that in the vessels containing the bichloride of mercury and sulphate of copper retained the original odour, without the development of the slightest acid reaction, showing that these agents arrest the lactic fermentation as completely as the vinous. There was scarcely any appearance of change or formation of acid in those vessels containing mustard and creosote, and the development of acid was feeble in those with sulphite of soda and sulphate of iron, which appeared to have more power in checking lactic than vinous fermentation. None of the other agents, except the wood spirit, seemed to have any power in checking this species of fermentive action.

"We would notice the fact proved by these experiments, that whilst three of the most powerful agents in arresting both of these two kinds of fermentive actions, viz., bichloride of mercury, sulphate of copper, and creosote, are likewise most powerfully antiseptic, there are others, equally powerful in arresting putrefaction, which exert no well-marked influence in preventing these fermentive actions. Arsenious acid, for example, stops the putrefaction of animal substances, but has no marked influence on either kind of fermentation;

and we have seen that the chloride of zinc, which is used as a disinfecting agent, has no very decided effect in checking vinous fermentation."

The third chapter is devoted to an examination of that peculiar form of disorder of the stomach in which there is vomiting of fermenting matter, containing the remarkable microscopic plant called the *sarcina ventriculi.*

In the fourth chapter, the dyspeptic disorders arising from other fermentative actions are examined, and also the conditions of the stomach and its mucous membrane which tend to induce these morbid actions, and such disorders as acidity, heartburn, pain in the stomach, and vomiting. The fermentative actions which are actually known to take place in the stomach are pointed out as very numerous. "There can be no doubt whatever that the *vinous* fermentation occurs in the stomach, this being clearly proved by the fact that alcohol has been distilled from the matter rejected from the stomach in three cases of vomiting of sarcinæ; and as we have seen that the yeast plant has been found in fully one third of these cases, it is probable that the vinous precedes or accompanies the acid fermentation with sarcinæ in a large number of such cases. We know, too, that new or imperfectly fermented liquors cause much flatulent distension and uneasiness at the stomach in persons of weak digestive power, and this is owing to the heat of the stomach re-exciting the fermentive action, and causing an evolution of carbonic acid. Dr. Beaumont had an opportunity of observing fermentation, probably of this nature, in the stomach of St. Martin after he had been in the woods all day, and had eaten nothing but whortleberries from seven in the morning to eight in the evening. On looking into the stomach it was found full of berries and chymefying aliment, frothing and foaming like fermenting beer or cider.

"We know that several kinds of *acid* fermentation occur in the stomach, acidity after meals, especially when certain kinds of food have been taken, being one of the most common symptoms of indigestion. *Lactic acid*, generated by fermentation of the sugar or starch contained in the food, is the most common cause of the acidity, and this kind of fermentation gives rise to less disturbance than any other, one atom of sugar being transformed into two atoms of lactic acid without the evolution of any gas. This acid is also one of those which with pepsin produces an energetic digestive fluid, and it is so commonly present in the gastric juice, that it may in moderate quantity be considered a normal constituent. In excess, however, we have seen that any acid weakens or stops digestion, and it is so with the lactic, whether it be, as some have supposed, a secretion from the stomach, or a product of unnatural fermentive action. This disorder, it has been observed by Dr. Budd, is most common in nervous persons with feeble digestion, in whom it not unfrequently happens that acid collects in great quantity in the stomach after meals. They often familiarly tell us, that almost everything they take turns to an acid. If vomiting occur an hour or two after meals, the matter thrown up is very acid, and, on analysis, the acidity has been often found to be mainly due to lactic acid. In the case of sarcinic fermentation observed by Professor Goodsir, a considerable quantity of lactic acid

was found on analysis by Dr. George Wilson, but the chief acid in that case was the acetic.

"There is another kind of acid fermentation which often goes on along with the lactic, viz., the *butyric*, and this, being an acrid, oily acid, causes the heat and burning sensation at the stomach and in the throat, to which the name of heartburn has been given. We have already noticed the fact, that the same conditions which cause lactic fermentation will, at a higher temperature, cause the production of butyric acid. This acid has been several times found in the contents of the stomach, and its occurrence in Dr. Hassall's case of sarcinic vomiting has been already noticed.

"It has been observed that decayed cheese is the ferment which most readily causes this kind of fermentation; and as we know that lactate of lime in contact with it yields butyric acid and tartrate of lime, and that tartrate of lime in the same circumstances yields metacetonate and acetate of lime, and as we likewise know that the pungency which some kinds of cheese acquire during maturation is due to the formation of butyric acid, and two similar volatile oily acids, the capric and caproic, we have some ground for believing that these acids, which are generated out of the body in the same circumstances, may also be formed in the stomach. The skin is the excreting organ by which butyric and other oily acids are thrown out of the system, and it is probable that the formation in the stomach and digestive organs of some of these acrid, oily matters from abnormal fermentation, is the cause of the boils and other eruptions of the skin which are so well known to derive their origin from unobserved disorders of the stomach and bowels. During butyric fermentation there is an evolution of carbonic acid and hydrogen gases, which is the cause of the flatulent distension of the stomach and bowels so generally experienced by those who suffer from heartburn.

"*Acetous* fermentation is another kind which seems to occur in the stomach, and it has been already remarked, that in Goodsir's case the acetic was the most abundant acid. In the third case of vomiting of sarcina, which I have before related, the vomited matter was distilled for me by Mr. Abraham, and two drachms and a half of fluid, obtained by the distillation of four ounces, had a vinous odour and a specific gravity of ·998, indicating nearly 2 per cent. of alcohol. It was also acid; and as the usual tests did not indicate the presence of hydrochloric acid, we may conclude that the acidity must have been due to the presence of this volatile acid, and that in the case referred to the acetous must have accompanied the vinous fermentation.

"We may thus regard it as a matter proved beyond any doubt, that all these kinds of fermentation do occur in the stomach singly, successively, or in combination. Lehmann also states, that Frericks convinced himself that the colourless, viscid, ropy masses which are sometimes ejected in abundant quantity in gastric catarrh, possess almost entirely the same properties as the gum-like substances produced by what is called mucous fermentation. He also observes, that it appears to depend, at least in part, on the nature of the mucous secretion in gastric catarrh, whether the fermentation established in the amylacea be of the mucous, lactic, acetic, or butyric variety.

"The *saccharine* fermentation, we have seen, occurs during healthy digestion, under the influence of a ferment contained in the salivary and pancreatic fluids; but diabetes is a disease in which the stomach and other digestive organs acquire a morbid power of converting every sort of amylaceous matter, and even other kinds of aliment, into sugar. In the healthy condition there is no sugar found in the urine, and scarcely a trace of it in the blood, for as soon as it is absorbed into the circulation it is, under the influence of the alkali and fibrin of the blood, rapidly oxidized, being transformed by the oxygen absorbed at the lungs into lactic acid, and then into carbonic acid and water. In diabetes there is not merely the increased production of sugar, but there seems also to be a failure in the power to oxidize the sugar which is removed by the kidneys, and there is therefore a loss of an important kind of aliment required by the system, and hence the wasting and loss of flesh which sooner or later result from this disease. As there is not only the loss of power to assimilate the sugar, but also a remarkable tendency to the conversion of the food into sugar, it is obvious that there must be two great indications in the treatment of this disease, viz., to prevent the morbid tendency to the formation of sugar, and to promote the oxidation and assimilation of what is formed. The treatment of diabetes is too extensive a subject for us to enter upon fully here, and I would therefore only now observe, that in carrying out the first indication the attention of medical men has been chiefly directed to the use of those kinds of food which are least prone to undergo the saccharine change; but in examining the long list of remedies which have been found of use in this intractable disease, we find that many of them (and amongst others that might be named, creosote) have antifermentive properties, and it is probable that if the attention of medical men were more systematically directed to this object, and to the employment of antifermentive agents, our treatment of the disease would be improved and advanced. Astringents, both vegetable and mineral, have been found of use in the treatment of diabetes, and they, as well as opium, act probably by diminishing the mucous or albuminous ferment. The sulphite of soda appeared to be of service in one case in which I prescribed it, but it has failed in other cases, both in my practice and that of other medical men.

"The food also sometimes undergoes the *putrefactive* change in the stomach, causing eructation of offensive smelling gas, which is sulphuretted hydrogen. This disorder is most apt to occur in children who have eaten largely of varieties of food." In this chapter, also, Dr. Turnbull shows that similar fermentative action may take place in the bowels.

In the fifth chapter the treatment of dyspeptic disorders is considered, and the action of various remedies investigated—the main object being to show that amongst the remedies which have been discovered to be most useful in relieving pain at the stomach, and stopping sickness and vomiting, are found several of those chemical agents which have most energetic antifermentative properties. "This observation holds true," says Dr. Turnbull, "in respect to creosote, which is one of the most powerful remedies in relieving pain at the stomach, and arresting sickness and vomiting; and also in respect to py-

roxilic spirit, another energetic antifermentive agent, which, we have seen, stops sickness and vomiting, especially in phthisical cases. I have found that prussic acid, which is one of the remedies most commonly used to allay pain and irritability of the stomach, and vomiting, is a powerful agent in checking vinous fermentation. Nitrate of silver is another antifermentive agent which relieves dyspeptic pain and vomiting. It is well known that lime-water, and the alkalies which have considerable antifermentive power, allay irritability of the stomach and vomiting in many cases; and the sulphite of soda we have seen to be the antifermentive agent which is most effective in stopping the acid vomiting of sarcina. Of the metallic antifermentive agents the salts of mercury seem to be the most energetic; and it is worthy of particular notice, that calomel is given to allay sickness, &c., in a variety of disordered states of the stomach and bowels. We give it in small doses combined with opium to stop the vomiting which so often accompanies the diarrhœa or cholera of autumn; and on the other hand, where there is vomiting, with obstinate constipation, we give a large dose of calomel, with a pretty full dose of opium, and find, as in the case alluded to (at page 95), that there is no remedy or combination more generally effectual in settling the stomach, in frequently moving the bowels, and in enabling the stomach afterwards to retain other medicines.

"As so many of the most energetic antifermentive agents, organic as well as metallic, possess these powers, we are naturally led to conclude from these facts, that there is a connection between antifermentive power and the power of relieving pain at the stomach, and sickness and vomiting; and we may also regard it as not improbable, that any medicinal agent devoid of irritating properties, which is proved to have energetic antifermentive properties, will also be found to have more or less power in reference to the symptoms noticed."

The last chapter is devoted to the examination of diet in relation to the tendency of various articles of food and drink to promote or prevent fermentative actions, and to showing that many condiments owe what value they possess to their antifermentative properties.

Such are the contents of a work which reflects great credit upon its author, and which must have the effect of leading the practitioner of medicine to view disorders of the stomach in a light in which they have been but little examined; and also of proving, in some measure, that chemical facts admit of more extended practical application in the advancement of medical knowledge.

Recherches expérimentales sur la physiologie et la pathologie des Capsules Surrénales. Par Dr. E. Brown-Sequard. ('Archives générales de Méd.,' Oct. and Nov., 1856.)

On Disease of the Supra-renal Capsules. By W. H. Ranking, M.D. ('Assoc. Med. Journal,' Aug. 9th, 1856.)

Cases of Disease of the Supra-renal Capsules. By Dr. Rootes, Dr. Robertson, M. Second-Ferreol, M. Trousseau, Dr. Gibbon, Dr. Monro, and Dr. Christie. ('Medical Times and Gazette,' June 7th, June 28th, Sept. 20th, and Oct. 4th, 1856. 'Assoc. Med. Journal,' Aug. 2d and Oct. 4th, 1856. 'Gaz. Med. de Paris,' Aug. 30th and Sept. 6th, 1856.)

During the past half year, several unequivocal cases of disease of the supra-renal capsules, (or "Addison's disease," as it has been called upon the Continent), have been placed on record, and the bald clinical history of the disease has received much light from the physiological investigations of M. Brown-Séquard. These investigations, indeed, are of extreme importance, for they show, very conclusively, that the supra-renal capsules have a very important part to play in the animal economy—a part which, if omitted, must lead to fatal results; and thus they supply the evidence which was wanting to complete the argument in Dr. Addison's monograph.

In this article, then, we propose to give the substance of M. Brown-Séquard's investigations, and to relate the cases which have occurred since our last report ('Abstract,' XXIII. p. 311), merely adding that the first case in our present list is the case to which reference was made in this last report, as one in which the disease under consideration would, in all probability, be found to exist after death.

The substance of M. Brown-Séquard's investigations may be stated in a few words. Thus:

The supra-renal capsules are very sensitive.

As age advances, the supra-renal capsules are found to gain considerably, both in weight and volume, and hence it appears that these organs are not exclusively related, as is generally supposed, to embryonic life. This increase in weight and volume, as age advances, was noticed in man and in all the mammifers examined.

The extirpation of both capsules destroys life with as much certainty, and with greater rapidity, than the extirpation of the kidneys; the mean duration of life in more than sixty animals thus mutilated—rabbits, dogs and cats, guinea-pigs, and mice—being not more than eleven hours and a half.

The extirpation of a single organ even was invariably fatal, and in this case the mean duration of life was not more than seventeen hours.

In all these experiments, it was fully proved, by experiments on other animals in which hemorrhage or peritonitis were caused, or in which the kidney or liver were injured, that the fatal results were not due to any of these causes.

After removing both capsules, the following phenomena were noticed:—feebleness, gradually passing into extreme prostration;

a respiration, first quickened, then retarded, and lastly irregular and spasmodic; a quick and weakened pulse; a gradual diminution of animal heat; and lastly, vertigo, convulsions in various forms, and occasionally coma.

When a single capsule was removed, all these phenomena became manifested, after a short interval in which the animal seemed to rally from the operation. In this case, the convulsions were generally more violent on the side operated upon, and occasionally the animal performed the waltzing movement which is seen after injury to the crus cerebri, the movement being towards the injured side.

The blood of rabbits about to die, in consequence of the removal of both supra-renal capsules, proved almost immediately fatal when injected into the vessels of another rabbit from which a single capsule had been removed a few hours previously, whereas blood taken from a healthy rabbit would restore life for several hours to a rabbit from which both capsules had been removed, even if the injection were deferred until the animal was actually moribund.

It appears, also, from some former experiments of M. Brown-Séquard, that wounds of certain parts of the spinal cord were followed by congestion with hypertrophy, or else with rapidly fatal inflammation of the supra-renal capsules.

And, lastly, it is stated, that in Paris the rabbits have been decimated by an epizootic malady in which the supra-renal capsules were found to be inflamed, and of which the symptoms were in some measure similar to those produced by extirpation of those organs.

Instead of being organs of no importance in the economy, it would thus appear that the supra-renal capsules are essential to life, and that their removal or disorganization may lead, partly, to some injurious alteration in the blood, and, partly, to some injurious operation upon the nervous system—an operation which is illustrated in the fact, that the convulsive movements were chiefly confined to one side when a single capsule was operated upon. At any rate, it is evident from these investigations, that a serious disease may arise when the supra-renal capsules fail to discharge their appointed duty,

The cases we have to record are eight in number, and we relate them in the order in which they have occurred, without any comment, merely referring to our last volume for further information respecting the disease.

1. *Dr. Ranking's case.*—"The subject was a lady, aged 58 years, of remarkably tall and robust frame, and of great obesity previously to the commencement of her fatal illness. Her habits of life were peculiar, especially in her partiality for fatty matters, and her abstinence from farinaceous diet. She was also a considerable consumer of porter and wine. When she first consulted me, in August, 1855, I was struck with the diminution of her bulk, and her great general prostration. Her chief complaint was of debility. Her appetite was bad, and she suffered from constant nausea and sinking at the pit of the stomach. She also incidentally called my attention to her colour, being particularly dissatisfied with the appearance of her hands, which resembled those of a creole. I confess that, on this occasion, I paid no attention to this apparently unimportant symptom,

being interested only in the endeavour to discover a cause for the emaciation and exhaustion. I examined the heart, the lungs, and, on a subsequent occasion, the urine, without finding any such disease as could explain the nature of the case. The heart's action was feeble, and its sounds sharp; and the only conclusion I could come to at the time was, that I had a case of general decadence of the digestive powers from over-stimulation, together with fatty degeneration of the heart. The latter suspicion was borne out by the results of the *post-mortem* examination.

"She paid me several visits, but made no satisfactory progress; and the discoloration of the skin gradually deepened, perplexing me as much as it annoyed the patient. At this time I noticed the first of a series of cases publishing in the 'Medical Times,' and I at once saw a clue to the enigma. I published the case at the time, and at once informed the friends of the peculiarity of the disease, and my conviction of its ultimate fatality. To be brief, the progress was, with some fluctuations, daily for the worse; and, in the month of March, there were the additional symptoms of pains in the joints, neck, and limbs, which continued to the time of her death. In the latter two months of her life, she emaciated rapidly; and, in the final days, she had alternations of delirium and coma, the kidneys and bowels, however, acting naturally to the very last.

"The *post-mortem* examination exhibited the following appearances. The body was emaciated. The integuments, especially the face and hands, were of a deep bronzy colour. The eyes were sunken; the conjunctiva pearly white. The subcutaneous fat, as well as that in the omentum and other internal parts, was firm, and of a deep chrome yellow. The head was not examined. The thoracic organs were healthy, with the exception of the heart, which was dilated, and in a state of fatty degeneration. The liver was softened, but otherwise healthy. The stomach was dilated, and its coats atrophied and destitute of rugæ. The spleen was of natural size and consistence. The intestines were healthy. The kidneys were congested and flabby. The supra-renal capsules were both enlarged, nodulated externally, and, when divided, were seen to be filled with tubercular deposit of various consistency, some portions being almost cartilaginous, others of the fluidity of scrofulous pus."

2. *M. Malherbe's case.*—A woman, named Ouvrard, æt. 48, was admitted into the Hôtel Dieu, at Nantes, on February 23d, 1856. She stated that she had been ill a year, and that she was very weak; but there were no symptoms of organic disease, excepting an enlargement of the cervical glands on the right side. She complained of wandering pains in the limbs and abdomen. There had been some loss of flesh, but the emaciation was not extreme. Her skin generally was noticed to be of a remarkably earthy hue, but there was, nevertheless, an approach to the yellow pallor of some states of chlorosis, or of the last stage of organic disease. M. Malherbe was inclined to attribute the change in colour to general anæmia, and accordingly prescribed a treatment by steel and nutritious diet. A few days after, the occurrence of a severe diarrhœa compelled the suspension of the medicine.

Shortly after her admission, the state of debility, which had previously been very well marked, increased greatly. The pulse, which was slow, became extremely feeble, and the stomach was so irritable, that all articles of food were rejected almost as soon as taken. M. Malherbe states, that it was at this juncture that he, for the first time, became acquainted, through the medium of M. Lasegue's translation in the 'Archives Générales,' with Dr. Addison's observations. On reading the description of the change in colour

of the skin which that physician had observed in association with a peculiar cachexia, he was at once forcibly reminded of his own patient.

On the 12th of March the woman died. By inquiring from her friends, it was now ascertained that her illness had commenced about eighteen months before, and had followed a severe mental emotion, since which she had grown languid and feeble, and her skin, previously very white, had acquired a gradually deepening shade of brown.

Autopsy.—The emaciation was not very marked. The smoked (*enfumée*) hue of the skin was rather less deep than it had been during life. It was deeper in the groins and axillæ than in other parts, but is perceptible everywhere. The lymphatic glands in all parts, were almost wholly transformed into masses of tubercle, but they did not form any noticeable swelling excepting in the right cervical and submaxillary region. Some of them were softening, others merely indurated. No tubercle existed in the lungs or any other of the viscera, excepting, as will be mentioned, in one kidney and the supra-renal capsules. The right kidney was somewhat increased in size and slightly congested. The left kidney was contracted and puckered, of scarcely half its natural size, and a grayish colour. Its substance was crammed with encysted masses of tuberculous deposit of variable size. Some of them were of cheesy consistence, others hard, and a few had suppurated.

Supra-renal capsules.—The left preserved its natural shape, but was greatly increased in thickness. In its substance were two large masses of tubercle, not, as yet, commencing to soften. The right organ was completely altered in shape, having assumed that of a cylinder, somewhat tapered at its extremities, and placed transversely over the upper end of the kidney. It was throughout of lardaceous consistence, resembling crude tubercle, and presented also a great number of encysted deposits of tubercle, in a cheesy state, varying in size from that of a millet-seed to that of a pea.

3. *Dr. W. Symonds Rootes's case.*—"Mr. J. E—, æt. 54, by profession a solicitor, consulted me in February, 1852. He was a man of rather below middle height; of dark complexion; nearly black hair; stout, and inclined to corpulence; lame from early life from diseased hip-joint; of temperate habits, and of active life latterly, though in early life he had been kept close to the desk, and had worked hard as a clerk. Considered that he had always enjoyed good health; but said that for many years he had suffered from habitual looseness of the bowels, to the extent of three or four evacuations regularly every morning, and frequently as many during the rest of the day, and had occasionally had hæmorrhoids slightly. He had also experienced some slight attacks of gout.

"Notwithstanding this habitual diarrhœa, he had got stout, and considered himself in very good health, till September 5th, 1851, when he was thrown out of his carriage, and sustained a severe scalp-wound, with concussion of the brain, with erysipelas following on the wound, and a paroxysm of gout succeeding to the latter.

"On coming under my observation he complained of feeling himself generally ill, but stated that he had no pain anywhere. He was still rather corpulent, but not nearly as much so as he had been. He had no headache; his mental powers were unimpaired; his memory (singularly retentive always) unaffected, his special senses perfect; he had no cough, no difficulty of breathing, no palpitation, no uneasiness of back. He had a very fair appetite, and enjoyed his food, but his diarrhœa still continued, and was very troublesome; and as soon as ever it became arrested by any means, so surely vomiting came on. He had also attacks of apparently causeless vomiting, of most uncertain occurrence, most frequently immediately after taking food,

and even sometimes during a meal. There was one singular peculiarity in his aspect,—his skin was universally of a dirty chalky yellow hue, more marked on the exposed surfaces: in the face, of a deep yellowish-brown; in the hands, of a tint resembling the stains of walnut juice, the conjunctivæ retaining their natural white colour. This alteration of his outward appearance was, as I said, most marked and peculiar; it worried him, and he repeatedly asked me what it meant, and was constantly drawing my attention to it. He complained of general uneasiness, of a sense of weariness and languor, and of muscular debility; and complained more than would be expected from one still looking stout and robust. He laid great stress on the absence of pain; appeared extremely solicitous to know what ailed him; expressed much apprehension about himself, and manifested considerable dread of death, feebly attempting, at the same time, to make light of his condition. I submitted him to repeated and most careful physical examinations. I frequently inspected the evacuations from the bowels; they were abundantly tinged with bile. I over and over again tested the urine (by heat and nitric acid)—it contained no albumen—there were no deposits, and with every care that I could bestow upon the case, could not find any evidence of disease in any organ. I was fairly puzzled to account for the symptoms. There was decidedly some serious derangement of the nutritive functions; but to the questions, Whence came it? and Whither did it tend? I could give no satisfactory answer. It was indeed well and pithily observed by his regular attendant, Mr. Thomson, of this town, 'throw a veil over his face, and pronounce him quite sound.'

"Meanwhile, week after week, and month after month rolled on, not only without any amendment, but with evident gradual aggravation of all his symptoms. The skin became still more changed in hue, till the casual passenger in the street would turn to gaze at him as he drove by; he became thinner, but never emaciated, and his muscular power became more and more enfeebled. He took a variety of tonic and astringent medicines with no evident good result, although he thought himself better for a certain time, during which he took cod-liver oil, quinine, and opium simultaneously. At last, in August, he began to have slight transitory attacks of loss of consciousness, with convulsive disorder of the muscles of the face and left side of the body; these were of irregular occurrence, but continued occasionally till the end of the month. In the night of the 30th he became violently delirious, and was very vociferous. This excitement passed rapidly into coma, and he died apoplectic on the morning of the 1st of September.

"I made an examination of the body after death, but permission was not given to examine the head. The discoloration of the skin was as evident in death as it had been during life; there was even yet an abundant deposit of deep yellow-coloured fat beneath the skin and in the omentum; and the muscles were of a peculiar deep red colour; indeed the fat and flesh more resembled the flesh and fat of an Alderney cow, than that of a human being.

"I made a careful and strict search into the condition of all the organs of the thoracic and abdominal cavities, and I could find no trace of morbid change in any one of them; save the spleen and supra-renal capsules; every other organ, so far as the scalpel can detect morbid conditions, was perfectly healthy; and I say this the more positively, because I have, throughout the whole of my professional life, enjoyed great opportunities of studying morbid anatomy, and have made personally several hundred dissections. The spleen and supra-renal capsules were much changed; the spleen was much enlarged, and so soft as to break down under very slight pressure; and its interior

resembled a mass of crushed mulberries. The supra-renal capsules were considerably enlarged, of firm consistence, and on division presented an appearance closely resembling a tuberculated gland."

4. *Dr. Tyndal Robertson's case.*—John Sumner, æt. 26, labourer, admitted into the Nottingham General Hospital April 12th, 1856. A tall, good-looking, spare man, dark-haired; temperate in his habits, and intelligent. Situation of abode healthy; parentage healthy. Has never before had any serious illness.

Present illness commenced twenty-two months since, while he was at work, with pain in the legs, sickness, and vomiting. He was thus ill for a fortnight, and then returned to work. In a month the sickness returned, unaccompanied by the pain in the legs, and it continued at intervals until fifteen months since, when he began to suffer from pain in the right hypochondrium, of a pricking, darting character. This, with occasional remissions, has continued to the present time. About a year ago he began to change colour, and, to use his own words, "has been jaundiced" since that time.

Present state.—The face, arms, hands, and chest are stained dark brown; the face and hands most notably, the arms and chest less distinctly so. The conjunctivæ are pearly, and very slightly tinged. The expression is pinched and anxious. Decubitus generally dorsal. Chest is equally resonant. Respiratory and heart's sounds perfectly normal. The heart's impulse is very feeble. The abdomen flat and retracted, not tender either on superficial or deep percussion. There is dulness on percussion on the right hypochondrium, extending two inches below the cartilages, and into the epigastrium. There is no notable flatulence, Tongue furred. Bowels confined. Stools whitish in colour. Urine pale, copious, slightly acid, sp. gr. 1020; deposits no sediment, and contains nothing abnormal. Pulse 80, small, feeble. Appetite very bad. He was ordered 5 minims of nitro-muriatic acid, with inf. gent. co., three times a day; 2 grs. of blue pill, with 5 grs. of extract of dandelion, every night; and half a drachm of sulphate of magnesia in broth every morning.

April 20th.—He was not quite so well, from great sickness and inability to vomit. An ipecacuanha emetic was ordered, which relieved him very much; and this was repeated with the same effect.

May 2d.—Has had rather more pain in the side, and vomits generally every night and after taking food. To have a digestive pill before dinner, and an injection every other morning. To omit all other medicines, and take small quantities of nourishing food at frequent intervals.

9th.—Feels better, with the exception of great weakness. Has now no pain or vomiting. To have 2 grains of quinine, with inf. gentiana, three times a day, and half a pint of beer daily.

12th.—Feels sick after the medicine. To take only half-doses.

15th.—Very feeble, and unable to take food. The bronzed character of the surface still continues. The epigastric swelling is softer, and the abdomen much retracted. There is distinct aortic pulsation visible to the left of the umbilicus. No murmur is heard on the light application of the stethoscope, but pressure elicits a strong blowing sound. There is dulness from the lower margin of the right ribs to a level with the umbilicus; percussion-note is resonant from the lower end of the sternum to the level of the ribs on the left side. Respiration very feeble. Heart's sounds indistinctly heard. Pulse 80. Tongue furred in centre, and dry. To have a mixture with ammonia and tincture of cardamoms; wine, ℥iv.

16th.—Was slightly delirious when he awoke this morning. He has had

no pain, but frequent vomiting. Abdomen is extremely retracted; soft, except above the umbilicus. There is here an uneven hardness, elongated, and not moveable. Bowels not open for two days. Tongue dry and tremulous. Pulse 84, extremely feeble; pupils contracted; great tremor of facial muscles. To continue the wine, and ammonia mixture, ℥ij. Gin with water, to relieve thirst.

17th.—At five a.m. he drank some gin-and-water, and said he felt better, but in about an hour he began to sink rapidly, and died about six o'clock.

Autopsy forty-eight hours after death.—Body emaciated. Abdominal walls greatly retracted. All the organs, carefully examined, gave little trace of disease. The lungs were healthy, with the exception of two or three small chalky deposits in the apex of the left one. The heart was rather small, and firmly contracted. Softish friable clots occupied both the left auricle and ventricle, the right ventricle, and extended into the pulmonary artery. The liver was marked with a few white spots on its convex surface. Gall-bladder distended partially. The stomach and small intestines nearly empty. The spleen apparently healthy. The transverse colon contained some lumpy fæcal matter; the rest of it, and the rectum, free. The brain was not examined, in consequence of the body being unexpectedly removed. The kidneys were apparently healthy. The supra-renal capsules were much enlarged. The left was cut across, and found to consist of a soft, cheesy mass, enveloped in a harder and rather more yellow-coloured exterior. This could not be broken down with the finger, and, when sliced, was smooth, and somewhat glistening. The soft part was readily broken up, and a small stream of water at once detached it from the nidus in which it was placed. Under the microscope, it seemed to be composed of irregular cells, oil granules, and smaller portions of amorphous matter. Some of the cells contained one, some two or three nuclei. Acetic acid applied to a section of the firmer exterior part showed the same kind of cells, with the addition of some scattered fibrillæ. Not a particle of healthy structure was discernible in any part of the organs.

The right capsule, which seemed softer and further advanced in disintegration, was sent to the Pathological Society of London, through Dr. Quain, who has since furnished the following Report:

"The capsule, retaining much of its original form, was about the size of half a large hen-egg. On making a vertical section through the mass, it was seen to be composed of a thin capsule, containing a solid and semifluid mass of a yellow colour. The solid substance, which was chiefly towards the surface, had the consistence of Gruyère cheese, and somewhat its appearance. The semifluid portion, which was evidently the result of a softening of the solid portion, had the consistence of thick cream.

"The solid and semifluid substances, under the microscope, presented very similar constituents—the difference being in the proportions of these constituents. The solid consisted of cells—small, abortive-like, and containing two or three small nuclei of broken-up cells, granular particles, and fatty matter. The more fluid portion contained more granules, more fat, and fewer cells. There were some traces of the original capsular structure in the wall of the anterior portion of the tumour.

"The deposit presented to my mind all the characters of scrofulous matter."

A little of the blood examined after death was rather thicker than usual. The colourless corpuscles were slightly in excess. The cretaceous deposit in the lung consisted of irregular corpuscles, phosphate of lime, and a few crystals of cholesterine.

5. *M. Cazenave's case.*—This case is reported by M. Second-Féréol. It is that of a man, æt. 35, of somewhat intemperate habits. The bronzed discoloration of the skin was noticed first of all in the countenance, and then, after passing off more or less completely on several occasions, it became considerably more marked, and at the same time it extended to the hands. For these symptoms, quinine and "l'eau d'Enghien" were given to him in the Hôpital Necker. In the commencement of 1856, he was admitted into the Hôpital St. Louis, under M. Cazenave, and at this time there were evident signs of pulmonary consumption. About the middle of February, he was discharged somewhat improved. Last of all he returned to die on the 17th of April, after having suffered for three weeks from diarrhœa, accompanied by frequent vomiting.

On examination after death, both sufra-renal capsules were found to be evidently changed and voluminous, very hard, knobbed, or quasi-knobbed. Under the microscope, the only alteration was found to consist in the presence of some fat and pus globules.

The discoloured portion of the skin, when examined microscopically, presented, as in the case of the negro, a very abundant layer of pigmentary granules under the epidermis; and, *apropos* of this remark, M. Second-Féréol says that the supra-renal capsules are usually more developed in the negro than in the white races. Is this so?

6. *M. Trousseau's case.*—A man, named Lavallée, æt. 30, the coachman of the Minister of the Interior, was admitted into the Salle Sainte-Agnès of the Hôtel Dieu, at Paris, under the care of M. Trousseau, on the 30th of July, 1856. As a child he had been rickety, and his legs exhibited the characteristic deformity of this disease; but he had enjoyed good and even robust health until about five months before his admission into the hospital, when he began to lose flesh. During these five months, according to his own statement, he has lost three fourths of his former weight. Then his wife noticed a dark discoloration of his hands, which was at first referred to his work, but which was found to become darker the more he attempted to wash it off. Then his face and the rest of his body became affected, until his appearance differed very little from that of a quadroon. At the same time he experienced vague pains in the lumbar region, and every day his strength failed perceptibly.

On admission, the bronzed discoloration of the skin was very marked in several places, especially on the nipple, in the axilla, and on the penis and scrotum. The lips and gums were also discoloured. The nails were blanched, and in extreme anæmia, and their whiteness contrasted in a very remarkable manner with the darkness of the hands. Although considerably emaciated, his muscles were not materially affected. The digestion was good, but there was a positive dislike for animal food. The chest was healthy; the pulse regular; the blood (examined by M. Robin) was that of a person slightly anæmic.

The treatment consisted principally of tonics, such as quinine and iron, with a diet suited to his fancy, and under it he seemed to improve a short time, but only for a short time. On the 13th and 14th of August, there were some pains in the abdomen. On the 15th, there was a rigor of some hours' duration, and after this a copious diarrhœa. All food was refused. On the 16th, the diarrhœa continued, the skin became cool, the features changed, and the pulse small and frequent, the discoloration of the skin appearing more marked than ever. In the afternoon there was delirium. On the 17th, extreme prostration took the place of the agitation of the previous evening. The intelligence became obtuse, and the diarrhœa continued. On

the 18th, the patient sank peacefully, and at 11, a.m., he died. M. Trousseau adds that there was nothing of the nature of cholera in the diarrhœa.

After death, the brain, the kidneys, the spleen, and the liver, were found to be in a perfectly healthy condition, and with the exception of a few tubercles in the lungs, the only disease that could be detected was in the supra-renal capsules. These organs were enlarged to the size of a hen's egg, and infiltrated with white kernels, which M. Brown-Séquard has shown to be composed of tubercular matter. Some of these kernels were softened.

7. *Dr. Gibbon's case.*—E. D—, æt. 52 years, a poor man, exposed very much to all weathers, was admitted in February into the London Hospital under the care of Dr. Parker. The man complained of general debility, loss of appetite, some slight cough, with some emaciation; his skin was yellow but cool and moist; some crepitus was detected at the posterior part of the chest. Pulse 94, soft, and weak; bowels costive; tongue furred. His urine was reported clear; specific gravity 1·022, acid, and free from albumen. The treatment chiefly consisted of tonics; he seemed to make very little way, but, on the contrary, to grow weaker and weaker. Dr. Gibbon took charge of the patient a week before his death, when he reported him in a low typhoid state, and, he believed, sinking from phthisis. Yet, after a careful examination, he could not detect the stethoscopic signs of phthisis. The symptoms were those rather of typhoid fever. From the yellowish-brown appearance of the skin, and the general cachectic state of the patient, Dr. Gibbon also diagnosticated disease of the supra-renal capsules. The poor man died apparently from exhaustion; no treatment seemed of any use.

At the post-mortem examination, the yellowish colour of the skin was most peculiar. There was great emaciation; the lungs were healthy, as were also the heart, liver, spleen, and kidneys; but on coming to the supra-renal capsules, they appeared both enlarged, and when laid open were seen to consist of simple membranous bags, with shreds of torn up or disintegrated tissue. In one capsule some traces of healthy cortical structure were found; but in the other the tissue of the capsule, whatever it is, whether glandular or otherwise, was completely gone.

8. *Dr. William Monro's case.*— Mrs. B—, æt. 40, wife of a clergyman, residing at Newport, Fifeshire, states that, about eight or nine years ago, she first observed a dark coloured spot on her forehead, which gradually increased in size; while other portions of her head, face, and neck, became similarly affected. At this time, her general health was pretty good, although, about fifteen years since, in consequence of having been obliged to leap from the top of a stage-coach, she suffered a good deal from some internal complaints. She understood that the uterus was displaced. She has been married sixteen years, but has had no children. When young, she was healthy, but never robust; she has of late become very thin and weak. About eight months ago, while attending upon her husband, who was seriously ill, and being exposed to much mental anxiety and great bodily fatigue, the dark colour of the skin became much deeper and more general, the whole surface of the body partaking more or less of the dark hue.

June 12th, 1856.—At present the patient is extremely emaciated. Her face in colour nearly resembles that of a Lascar, or a native of the East Indies. When she sits up, she feels great weakness, sinking, and prostration, increased greatly by an attack, a few days ago, of diarrhœa. She has a dry short cough, with tough expectoration; she has been subject to a cough since childhood, when she had measles. Pulse 100, small, and compressible. Tongue whitish; very little appetite. Her sleep is much disturbed by the cough. The bowels are now regular. She has considerable thirst. The

catamenia are regular. She complains of no pain. The chest sounds well on percussion, except for a space below the clavicle on each side, which is dull. The heart's action is normal. The abdomen is clung to the spine, which can be readily felt through the parietes of the abdomen, as can also the pulsation of the abdominal aorta. None of the abdominal viscera can, by a careful examination, be detected to be organically diseased. The urine is natural in quantity, and of a light straw colour, specific gravity 1·012, free from albumen, and exhibiting under the microscope no unusual deposit. The uterus is in its normal position, and healthy. The blood examined under the microscope exhibited nothing unusual, no excess of white corpuscles. The colour of the skin is particularly dark over both knees and elbow-joints, and also on the back of the neck. The palms of the hands and palmar surface of fingers are very little discoloured, and contrast much with the posterior surface. She was recommended to try the use of tincture of muriate of iron, ten drops thrice a day; and, externally, the free use of olive oil to the skin; to pay attention to the bowels, and the state of the secretions; and to take a light nourishing diet.

June 17th.—She is no better. She has not been able to take the iron, but has used the oil. The cough is very troublesome. She was ordered to have a mixture with ipecacuanha and solution of muriate of morphia, and also to take the fluid extract of sarsaparilla. The appetite is bad; the bowels regular. She is evidently weaker.

She continued getting gradually worse until the evening of the 21st, when she died, remaining quite sensible to the last.

For the following interesting and minute post-mortem appearances, I am indebted to my friend Dr. William Aitken, late Assistant Pathological Commissioner to the Army in the East, to whom I beg to express my obligation for his kindness, and the interest he has taken in this case.

Post-mortem examination, June 23d, 1856.—In this case, the body was greatly emaciated. The chest and waist were greatly contracted, so much so that the waist could be embraced in the span of the two hands, the thumbs meeting in front, and the middle fingers behind, the girth being seventeen inches. The colour of the skin was of a dark bronze hue throughout, and in many places patches of a darker brown colour were conspicuous. Such patches were more particularly obvious in the vicinity of the knees, and in the lateral and posterior regions of the neck. At the angles of the mouth, and round the lips, where the mucous membrane meets the skin, isolated deposits of pigment gave a dirty sordes-like appearance to the mouth.

The body generally was anæmic. The heart was small and flabby; the lungs were adherent at their apices by old adhesions. A deposit of a tuberculous nature was also disseminated throughout the region of the apices on both sides, but not in any considerable quantity. The rest of the pulmonary substance appeared healthy. In the *abdomen*, the spleen, the liver, and the kidneys, were severally adherent to their surrounding connections; but the parenchyma of these organs appeared natural. The supra-renal capsules and the mucous membrane of the alimentary canal were alone the seat of marked morbid change. The supra-renal capsule on the right side presented a large mass, pressing up chiefly into the substance of the liver, a portion of whose tissue, altered by pressure, could not be separated from the morbid supra-renal body. The organ retained no part of its natural shape. It was enlarged to about four times its natural volume, and its enlargement assumed an irregular tuberculated form; while the shape of the mass was modified in some parts by surrounding structures on which it pressed. The side towards the vena cava had a deep groove in relation with that vein; and the texture

of the vein, to the extent of half an inch, was so finely incorporated with the morbid supra-renal body, that the most careful dissection could not separate them. On careful removal from all its relations, the absolute weight of the right supra-renal body was 278 grains; its specific gravity, 1046. The supra-renal vein was very small, almost atropic. The sympathetic nerves from the lesser splanchnic were greatly increased in size, and so were also some of the branches, as well as the ganglia of the solar plexus of nerves on that side, and in contact with the morbid organ. The texture of these nervous parts was of a rosy hue, as if under the influence of vascular excitement. No other change could be observed in them. The supra-renal capsule on the left side was an oblong rectangular body, and had retained so much of its original shape as to present its flattened form, and, on the whole, preserved its relations to surrounding parts. A nearly similar but less vascular condition of the nerves was apparent on this side also. The absolute weight of the body was 85 grains; its specific gravity, 1042.

Sectional and microscopic appearances.—A section in the longest axis of the organ showed two distinct appearances, namely, a part of a dense gristly hardness, and a part which evidently corresponded to the medullary part of the organ, which was chiefly occupied by a yellow deposit. In the medullary portion of the organs, the morbid process appeared to have advanced the most, and to be in the greatest abundance. Deposition and subsequent softening of exuded matter of a marked and peculiar aspect, resembling very much what is usually called scrofulous, tubercular, or yellow cheesy-like matter, occupied the medullary portion of the capsule. The veins from the organ were generally diminished in size, and the cavity corresponding to the central venous sinus was entirely occupied by the yellow exudation, in various conditions as to softening. Small sacs of various sizes were scattered throughout the stroma (cortical) of the organ, and contained the same scrofulous looking material, in various states of consistence. No true oval vesicles natural to the cortical substance of the viscus could be seen by the microscope; and the only structure of an elementary form, which could be observed and referred to the normal histological elements of the supra-renal body, consisted in the caudate and branched nucleated cells seen in the firmer parts of the yellow deposit, which involved the medullary portion of the organ. The gristly hard part was composed, microscopically, of fibrinous elements, in the form of elongated, fusiform, and spindle-shaped cells, with simple and compound nuclei, together with fine filamentous fibres and granular matter. The yellow matter was made up of fine granular stroma, in which compound granular corpuscles, oil granules, and globules, together with crystals soluble in acetic acid, were most obvious and abundant. Clear and transparent cells, free of nuclei, together with club-shaped, caudate, and very irregularly-branched cells, with simple and compound nuclei, were also obvious constituents. The mucous membrane of the mouth was thin, pale, and bloodless, the labial and buccal glands shining prominently through. The stomach and substance of the intestinal tube were uniformly thin throughout. In the stomach, the solitary gastric glands were remarkably prominent, while the mucous membrane generally was wasted and atrophic. Microscopic sections from the jejunum and ileum showed the villi remarkably attenuated, and the mucous membrane very readily separated from the adjacent muscular part of the gut. The tubular glands of the mucous membrane were almost entirely gone, and their place was supplied by a granular amorphous material. The average specific gravity of the mucous membrane was 1040.

The greatly increased size and rosy hue of the nerves in contact with and

passing into the morbid organs are worthy of notice; but whether these appearances were the result of an inflammatory condition of the capsules, or not, it would be unsafe to hazard an opinion.

Dr. Christie's case.—Betsy Tait, æt. 36, admitted into the Dundee Royal Infirmary, Aug. 2d, 1856. This patient has always enjoyed good health up till about six months ago, when, after exposure to cold, she was seized with cough and expectoration. About two months after the commencement of illness, she had rigors, accompanied by pain of head and lumbar region, and, a few days after this attack, she observed her skin to become of a gradually increasing dusky colour. She has been treated by a medical man for the last two months, but without any benefit.

State on admission.—She is emaciated, and her skin is of a bronze colour; the right side of face is in a semi-paralyzed state, giving a great peculiarity of expression when she speaks. Complains of pain over the region of liver, and in the loins, aggravated on pressure, more especially in left lumbar region; in both of these situations there is evident fulness. She has also cough, accompanied by frothy, muco-purulent expectoration; but has no pain in chest, which, on examination, sounds dull over left lung, where harsh, cavernous respiration is heard. Puerile breathing audible over lower part of right lung, and harsh breathing at its apex. Her bowels are constipated; urine normal; tongue dry; pulse 108, feeble.

4th.—Some castor oil given yesterday operated well, bringing away a large quantity of very dark-coloured fæces; but early this morning the patient sank into a comatose state, in which she continued till her death, at 10 a.m.

Sectio Cadaveris, 53 hours after death.—Body much emaciated; skin of a dark mahogany colour all over body and legs. Extensive adhesions of old standing existed all round left lung, which also showed tubercle in all stages up to the large ulcerated cavity; the right lung was also tuberculous at its apex. Liver healthy; spleen healthy; heart small, and the muscular tissue rather flabby-looking; kidneys healthy. Supra-renal capsules rather larger than natural. On laying them open, each contained a series of cysts, filled with a thin, serous fluid, with small, floating flocculi, very little cortical substance remaining.

Inoculation des Eaux jambes du Cheval à l'Homme. Par M. Pichot, de La Loupe, M. Manoury, de Chartres, M. Bousquet, M. Tholazan. (Gaz. Médicale de Paris, May 31st, June 7th, June 14th, and June 21st, 1856.)

On Inoculation of Man with the matter of "Grease." By MM. Pichot, Manoury, Bousquet, and Tholoazan.

On the 29th of April, in the present year, a communication was addressed to the Académie de Médicine, at Paris, by M. Manoury, surgeon to the Hôtel Dieu, at Chartres, and by M. Pichot, a physician at La Loupe, concerning a man who had been accidentally inoculated with matter proceeding from a horse affected with grease; and at the same time some of the matter obtained from the man was forwarded to M. Bousquet for experimental purposes. The account of the case

is this. On Tuesday, the 5th of March, a farrier, named Brissot, aged 28, called upon Dr. Pichot in consequence of a painful affection of his hands, and, on examination, these organs were found to be considerably swollen, and covered with *opaline and umbilicated pustules, which were confluent, and in every respect similar to vaccine pustules of the eighth or ninth day.* He had never been vaccinated, and he had not been near any cow, but he remembered to have shod a short time previously a horse affected with grease. This happened on the 11th of February. There are twenty-four days from the 11th of February to the 5th of March, but as at this latter date the pustules presented the appearance of vaccine pustules of the eighth or ninth day, it is necessary to conclude that the period of incubation had been fifteen days. The horse was seen by M. Bousergent, a pupil of the veterinary schools of Toulouse and Alfort, and found to be suffering from a true attack of grease.

Dr. Pichot obtained some matter from the back of the hands of the patient by puncturing the pustules with a lancet, and having placed it npon glass, some was sent to M. Manoury, at Chartres, and some to M. Bousquet. With the matter sent to him M. Manoury made a series of very exact experiments upon children, and in every case (the number is not given) the inoculation resulted in a well-defined pustule, of the size of a large lentil, umbilicated, surrounded with an areola, and not to be distinguished from a vaccine pustule. He also obtained similar pustules by inoculating other children with the matter obtained from these pustules. Some of this secondary matter was also sent by M. Manoury to M. Bousquet, and this gentleman inoculated a child at one and the same time with it and with the matter obtained directly from Brissot, and sent to him by Dr. Pichot. The right arm was inoculated with the one kind of matter, and the left arm with the other kind. The result was remarkable. The inoculation made with the matter obtained from the farrier failed altogether, producing neither congestion nor irritation ; but in the inoculation made with the matter obtained secondarily from the child, the operation was perfectly successful, and every puncture was followed by a pustule which differed in no respect, either in its history or its appearance, from the common cow-pox.

These facts speak for themselves. There are developed in the hands of this farrier a malady which has all the properties as well as all the appearances of cow-pox ; and the only question is, as to how this malady originated. The man declares that he had not been near any cow, and he remembers to have shod a horse affected with grease fifteen days before the skin became affected—a horse which, when examined by a veterinarian, was found to be suffering in the foot and lower part of the leg from that cutaneous malady which is characterized by a discharge, at first serous and limpid, then yellowish, acrid, and fetid, with a reddish swelling of the skin and sub-cutaneous tissue, which the French call *défluxions, eaux-puanites, eaux aux jambes*, and which we call *grease*. Is there, then, that intimate relation between cow-pox and grease which appeared to be so probable to the illustrious discoverer of vaccination, and to some of his contemporaries,

and which has since this time been almost or altogether overlooked? Jenner wrote, in 1798, that cow-pox was given to cows by farm servants from horses suffering from grease; and he succeeded in producing cow-pox in a cow and the vaccine pustule in a man, by inoculating them respectively with matter obtained from a horse thus affected. These experiments were repeated at the time, sometimes with success and sometimes without; and the cause of the uncertainty was not known until the subject was investigated by Mr. Loy, a surgeon living at Pickering, in Yorkshire. These investigations, which are models of scientific induction and deduction, were made in 1801. In the beginning of the year this gentleman was consulted by a farrier, whose hands were covered with an eruption, consisting of pustules, separated from each other, and surrounded by an inflammatory circle. These vesicles resembled those proceeding from a burn, only they were regularly rounded, and their centre exhibited a black spot which seemed to have been caused by some slight injury. This man had been engaged in dressing a horse suffering from grease. He had never suffered in the same way before; but he had had the smallpox. About the same period, a butcher living at Middleton, a place near Pickering, was attacked by painful ulcers on both hands, and especially about the roots of the nails. These ulcers became inflamed in the course of a few days, and a vesicle formed upon each of them. The lymphatics of the arms also became red and painful, and a tumour formed in one of the armpits. There was also a pustule on one of the eyebrows similar to the pustules upon the hands, which had to all appearance been communicated by touching or rubbing the part. In this case there was considerable fever. This patient, like the last, had been occupied in attending upon a horse suffering from grease, and was so occupied at the time he fell ill. He had not had smallpox.

In order to ascertain whether this malady was communicable by inoculation, Mr. Loy inserted some of the matter contained in the pustules into the arm of a brother of the man, who had never had smallpox. On the third day a vesicle had formed. Then there were some feverish symptoms. In the end the vesicle exhibited all the character of true cow-pox.

Cotemporaneously with this experiment some of the same matter was inserted, by means of a new lancet, into the teat of a cow. Nine days afterwards there was a vesicle, surrounded by a red areola. The teat also was hard to some distance from the puncture, and so painful that the animal would not allow it to be touched. A few days later a crust had formed upon the vesicle, and the inflammation had subsided.

An infant was inoculated with matter taken from the pustule which had formed upon the teat of this cow on the ninth day from its commencement, and the progress of the inoculation was watched with great attention, when it was found that the inflammation, the vesicles, and the formation of the crust, were not to be distinguished from the corresponding phenomena in ordinary vaccination. On the sixth day this infant was inoculated with the smallpox, and the puncture seemed

to inflame until the third day; but this disturbance passed off without any further development, and the child escaped the disease.

Another infant was inoculated with matter taken from the butcher. On the third day there was a pimple on the part punctured; on the sixth day, this was surrounded with a pale inflammatory circle, and the borders were more elevated than the centre; on the eighth day there was a vesicle containing a limpid fluid; on the fourteenth, this vesicle had changed into a brown and hard crust. Shortly afterwards this child was inoculated with the smallpox without any result.

In addition to these experiments, Mr. Loy inoculated the nipple of a cow with a very limpid matter, taken by a perfectly clean lancet, from the heel of a horse suffering from grease. On the fifth day the part punctured was elevated and surrounded with a pale redness. A few days afterwards a purple vesicle, containing a limpid fluid, had become formed, and the part was swollen and painful, but the general health of the animal did not appear to be affected.

Mr. Loy then inserted matter, which he had taken from the pustule of this cow, into the arm of an infant. On the sixth day afterwards there was considerable redness, and on the ninth a vesicle. Then this infant was inoculated in three different places with smallpox, and absolutely without result, either local or general.

Another infant was inoculated with matter taken from the heel of the horse which had been the occasion of the mischief. Three days afterwards there was a pustule surrounded with a small degree of inflammation; on the day following this pustule was more elevated; on the fifth day it had changed into a vesicle of a purple colour; on the sixth and seventh days this vesicle had become larger and darker. These changes were accompanied by a considerable degree of fever, the onset of which was marked by shivering and vomiting. The variolous inoculation was tried in this case, also, but no impression was made by it.

Three other children were inoculated with matter obtained from this last-mentioned child on the sixth day after its inoculation; and on the tenth day they presented vesicles surrounded with some degree of erysipelatous redness. These vesicles at this time were beginning to dry, but they still contained a considerable quantity of limpid matter. The children were then inoculated with the matter of smallpox, and the only effect of this operation was to produce a slight degree of local inflammation, which disappeared on the fifth day.

It was only after several unsuccessful attempts that Mr. Loy was able to satisfy himself that the matter of grease would act upon the cow without having first passed through a metamorphosis in the human body. At last, however, he found that the inoculation was abortive unless the matter was taken from a horse in which the symptoms of grease were general as well as local, beginning with fever and ending with an eruption, not only in the heels, but upon other parts of the skin, the fever subsiding when the eruption made its appearance.

These observations of Mr. Loy are also confirmed in every respect by the observations of Signor Sacco, whose 'Trattato de Vaccinazione con osserv. sul Giavardo et Vajuolo Pecorine' were published in Milan in 1800.

M. Sacco says that his first attempts at inoculation with the matter of grease were very unsuccessful. Before reading Mr. Loy's treatise he had operated unsuccessfully upon twenty-seven cows and eighteen children, and before he succeeded he was still doomed to failure in several instances. At length his own horse was attacked with grease, and he repeated his experiment with the clear viscid and fetid serosity which escaped from a crack in the heel on the fourth day from the commencement of the symptoms. These experiments, which were made upon two children and one cow, failed as completely as the others. *But his groom, who had to dress the heels of this horse, was affected with five pustules,* three on the right hand and two on the left fore-arm; which pustules were precisely like those of the cow-pox. This man had not been inoculated. Unfortunately, however, these pustules were too much dried up to be serviceable for any experiment when they were first seen by M. Sacco. About the same time, the coachman of a gentleman called Clari, who had also had to dress a horse suffering from grease, and who had not had smallpox, had both his hands covered with a vesicular eruption, accompanied with fever and diarrhœa. These vesicles were perfectly similar to the vesicles of smallpox, and several children who were inoculated with matter obtained from them by a colleague of M. Sacco, M. Birago, went through the regular stages of the vaccine complaint. In addition to this, the same coachman was taken on the same day on which M. Birago made his experiments to the Foundling Hospital at Lembrate, and then M. Sacco inoculated nine children and one cow with matter obtained from him, the result being that the operation failed upon the cow and upon seven of the children, and succeeded upon the remaining two children. In these two children the complaint produced was absolutely undistinguishable from common cow-pox, and the matter obtained from these children has been subsequently used in a long series of vaccination.

Nor is this the only evidence connected with this subject. On the contrary, Jenner himself wrote, in January, 1801, of a farm-servant on a neighbouring estate near Berkeley, who was affected on one of his hands, after tending upon a horse affected with grease, with pustules which were not to be distinguished from those of cow-pox, and upon whom the inoculation with the matter of smallpox failed some three months afterwards. And in February of the following year Jenner writes of having seen, in the preceding summer, a pustule resembling cow-pox upon the hand of another farm-servant, who had been employed in dressing a diseased horse. He says, moreover, that he made several attempts to vaccinate with matter procured from this pustule, but without producing any other effect than a slight and transitory redness. This failure, however, did not at all shake Jenner's confidence as to the relationship existing between grease and smallpox; and as explaining the failure by showing that the causes

of success depend upon very subtle conditions, he remarks further that he had always failed to carry cow-pox by a lancet from one cow to the teat of another. He also says that oxen and bulls are never affected with cow-pox (this might be expected), and that vaccination succeeds readily upon calves of either sex.

Such, then, is the evidence upon which the analogy between grease and cow-pox must be made to rest, and hence the case of Brissot must be regarded as a very important contribution to the history of philosophical medicine.

II.

REPORT ON THE PROGRESS OF SURGERY.

On the effect of Chloroform upon the results of Surgical Operations. By James Arnott, M.D. (Medical Times and Gazette, Oct. 25th, and Nov. 1st, 1856.)

The announcement of "death from chloroform," does not now affect the professional reader in the manner it originally did. He regrets the individual occurrence, but he finds consolation in the reflection that such casualties are rare, and that they are much overbalanced by the favorable influence exerted by chloroform on the results of operations. Though a few may die, he says, from the immediate or direct effects of chloroform, many are saved by its ulterior agency.

He judges of the first circumstance—the number of sudden deaths—by the small number of reports which reach him; of the second, by the statistical investigations that have been instituted to determine the question.

On the first point, however, he is very apt to be deceived. Scarcely a hundred instances of sudden death from chloroform have as yet been reported, but there cannot be a doubt that by far the greater number have been concealed.

In some remarks on this subject, two years ago, it was stated, that although five cases of sudden death from chloroform had taken place in the London hospitals within the seven months preceding my publication, not one had been reported as occurring in the private practice of London during that period; and the same observation, it was stated, was applicable to a much longer time. Indeed, the author is not aware that more than two cases of sudden death from etherization have been published as happening in the private practice of London since its introduction. This evident concealment is neither extraordinary nor reprehensible. What family is there that would not endeavour to the utmost to avoid the horrors of a coroner's inquest, and the consequent newspaper report, where, as happens in the case of death from chloroform, there can be no suspicion of foul play? Nor can we blame the practitioner who would gladly escape from a criticism of his proceedings on such occasions. Useful as such modes of publicity may be on other accounts, they do not, in this instance, promote the advancement of medical knowledge. But many die from the direct effects of chloroform, and within a few hours of its administration,

whose deaths are attributed to other causes. Dr. Mouat has recently drawn attention to such cases. He speaks of soldiers who were operated upon in the Crimea under chloroform, as gradually sinking under the peculiar state of nausea and depression which follows its use. "Reaction is never thoroughly established, the desire for food never returns, and the patient sinks as it were stealthily, and dies from exhaustion in from twelve to twenty-four hours." "These cases," he adds, "are far more numerous than is generally supposed, and many of them may fairly be termed 'deaths from chloroform,' but are never so returned." *

The second source of consolation on such occasions, we have said, is the opinion that the sudden deaths from chloroform are much overbalanced by saving property as respects the results of operations. It has been asserted, in reference to certain amputations, that if five cases were to be killed by the direct agency of chloroform in every hundred operated upon, there would still be a saving of life by its ulterior agency. This is a most important point, about which there should be no doubt. If the position that there is a saving of life upon the whole be incontestable, it ought, for the credit of the profession, to be brought more frequently forward, especially on such occasions as the recent inquest at St. Thomas's Hospital: if it be unfounded, the sooner it is contradicted the better. It is the purpose of this paper to renew the investigation of the subject.

The question whether chloroform saves life as well as prevents pain, can only be determined by statistics. To attempt to form a judgment from individual experience, would be scarcely less erroneous than to estimate the comparative proportion of the two sexes (now ascertained with such wonderful accuracy by the aid of statistics) by counting the males and females in the inquirer's own family. Nor would reasoning from the observation of the sensible effects on the system bring us nearer the truth. The absence of pain may be, and probably is, an advantage as respects the result of an operation, but it may be much overbalanced by the other effects of the anæsthetic; and the beneficial stimulus excited by chloroform may be followed by injurious prostration.† On the other hand, poisonous and depressing as the drug manifestly is in some cases, it may still possess some hidden virtues conducing to recovery. Whatever its ulterior agency may be, as this produces no peculiar symptoms, it is by results alone that its nature can be determined.

The writer whose inquiries on this subject have been most influential, is Dr. Simpson, of Edinburgh.

About two years after the introduction of etherization, and when surgeons were beginning to fear that the bad effects of chloroform might not be limited to the very time of its administration, but might

* 'Medical Times and Gazette,' September, 1856.

† The credit of a double advantage claimed for general anæsthesia, of preventing both pain and danger, is justly due to local anæsthesia from cold, and when used for other purposes as well as operations. Mr. Langston Parker, in his recent work on Cancer, speaks of our now being able to use caustic in its cure in consequence of the pain from it being removed by frigorific applications; but the prevention of erysipelas by intense cold is not of less importance, to say nothing of its own direct and efficacious curative agency in malignant diseases.

seriously affect the results of operations, Dr. Simpson's statistical investigations respecting this point were published. They were prefaced by an ably written and lucid exposition of the value of statistics applied to this inquiry, which, with the manifest trouble he had had in collecting his materials, and the apparent care he had taken in arranging them, insured a ready and confiding reception to his investigations by the profession. From that time all anxiety about the ulterior effects of chloroform seemed to cease, and surgeons have continued to employ it without hesitation, under the conviction, that instead of there being a destruction of life as the price paid for the insensibility, a great saving of life is effected by it. The tables in which he condensed the results of his investigations, and which have just been reprinted in his collected works, have been as influential with surgeons as the Northampton Life Tables have been with Assurance Companies.

As these tables represent the mortality from amputations to have been 29 per cent. immediately before the introduction of etherization, and 23 per cent. after its introduction, and as the inference from them is that there has been a saving of life effected by the change to the amount of 6 per cent. (a number doubtless far exceeding that of the sudden deaths which have taken place during the administration of chloroform) it is no wonder that they should have been so often appealed to in discussions upon this subject, and that all theoretical objections to chloroform should have been refuted by them.

Nevertheless, these tables, when closely examined, are found to involve the greatest fallacies; they do not afford a particle of evidence that the introduction of chloroform has lessened the mortality after amputation.

The first, which professes to give the average mortality of thirty British hospitals, should have shown the number of operations, and their results, at each of these hospitals during precisely the same period of time; but, instead of this, while the period of observation, as respects the only large healthy hospital inserted in the list, is limited to two years, that of the large unhealthy hospitals of Edinburgh and Glasgow, the excessive mortality of which almost equals that of the Paris hospitals, extends to more than three times this duration. If an equal period of observation be taken to form this average (excluding two of the small hospitals, one healthy and the other unhealthy, on account of the period of observation respecting them being uncertain), the table, instead of showing a mortality of 29 per cent., would show one of only 24; and, if other large healthy hospitals, like that at Bristol, had been included—such as the Liverpool Royal Infirmary, where (as appears from a published return) the deaths from amputation during three consecutive years were only at the rate of 6 per cent.—the average mortality of the whole would probably have been considerably less than 20 per cent.

The second table involves no miscalculation so palpable as that in the first, but it leads to conclusions equally erroneous. It gives an account of the number of amputations in which ether was administered, with the results; but what the charcter of the cases was in which it was used—whether the patients were healthy or worn out with

disease—we have no means of judging. In all probability the best cases were generally selected, for only a few were returned from each hospital; and it was natural and proper that at first the best cases should be chosen for trial; not only those free from serious organic disease of the vital parts (a class which were long excluded), but those in which the reparative powers were most conspicuous; and a clearer proof that this was the case cannot be adduced than the fact that the etherized cases from the eight London hospitals inserted in this list, show a mortality of more than 10 per cent. below that which (as we shall presently see) exists at the present day.

But as the prospect of recovery from amputation is good or bad, according to the general health of the patient, and other circumstances, if we could always select our cases, the usual mortality would probably be reduced to less than a half. As it is, all the advantage which the 302 etherized cases appear by the table to have over the non-etherized 618 of the other table (admitting the returns to be correct), does not amount to more than 1 per cent. To prove that there was not actually a loss of life, instead of a gain, from etherization, there should have been, assuming that the cases were generally selected, a much greater difference than this. A per-centage of 23 deaths from amputation in the English provincial hospitals, even supposing that every case was etherized, would indicate a great increase of the usual rate of mortality before the introduction of etherization.

Another objection to the reception of this table as an argument in favour of the indiscriminate use of chloroform, is, that it has reference principally to sulphuric ether as the means of producing anæsthesia, for very few operations had been performed under chloroform at the time of its publication. Now, chloroform, whatever other advantages it may possess over ether, has none as regards safety; and, what is of more importance in respect to this table, it has of late years been employed much more boldly than was formerly usual. Patients were then frequently only half intoxicated by the anæsthetic, and the intoxication was kept up but for a short time. A change in this practice had not yet been effected, by the singular argument, that, because a patient labouring under convulsions may be kept for a long time under the full influence of chloroform apparently without injury, the same proceeding can be adopted with impunity in the case of a patient exposed to the long-continued danger of a large amputation wound.

We shall now follow Dr. Arnott to the consideration of tables of a very different character to the above, as respects their construction, and which disclose facts of a very different import. Dr. Arnott writes:

"Although I had long felt convinced, from reflecting on the evidently poisonous character of chloroform, that the number of sudden deaths produced by it, whether reported or not reported, was by no means the measure of the whole mortality, I was unable to obtain satisfactory evidence of this. It was by statistics alone that this point could be determined, and I had no easy access to the repertories of the necessary facts preserved in hospitals. At last, my attention was directed to the Statistical Reports of Operations which have appeared

for several years past in the 'Medical Times and Gazette,' by a reference to them in Sir Benjamin Brodie's recently published paper on Lithotrity. On examination, I found that these reports were all I could have desired. A monthly account is given of the whole of the operations during the last three years. Their accuracy is assured by the circumstantiality with which every case is mentioned, and by the fact that they were not drawn up with a view to the settlement of any particular question in practice. The reporters of these statistics have been under no conceivable bias; they have been actuated solely by a desire to promote surgical science. If their returns have a fault, it is certainly not the over-statement of the mortality; for, almost every month, a large number of cases are mentioned as being still under treatment; and although the fatal issue of a few of these is afterwards reported, it is probable that other deaths have happened in consequence of the operation, but at too long a period after it to be known to the reporter, or to be recorded by him. It might at first sight appear desirable to have reports for a longer period than three years, but were the period now extended, any such comparison as that we are now making between the results of operations, becomes imperfect or impossible, by the advancing improvements altering the circumstances.

"In the 'Medical Times and Gazette,' there are separate statistical reports both of the London and Provincial hospitals; but I shall restrict my attention to the first, for the following reasons. The principal is, that the hospitals in the provinces are too far apart, and differ from each other in too many circumstances, such as climate, site, and character of the patients frequenting them, to render it possible to form an estimate of their average mortality before etherization was introduced, from the very few published returns of the results of amputations in the provincial hospitals at that time. Another reason is, that I am not sure that the administration of chloroform has been so universal in operations in the country as it has been for many years past in the metropolis. In London, on the other hand, there are many large hospitals furnishing the requisite number of facts, and they are all under nearly the same kind of general management, surgical practice, &c. We have authentic returns, also, of the mortality after amputations in some of the large London hospitals before ether was introduced, from which, in consequence of the similarity of circumstances just alluded to, we can construct a sufficiently correct estimate of the general mortality for comparison with the present rate. The following table has been constructed from these returns.

Table I.

Showing the Average Mortality after Amputation of the Thigh, Leg, and Arm, in three London hospitals before the introduction of Chloroform.

Hospitals.	Date of Observation.	Reporter.	Primary Amputations.		Secondary Amputations.		Total.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
University College	1835-40	Mr. Potter.	8	3	50	7	58	10
St. Thomas's . .	1842-47	Mr. South.	20	7	29	6	49	13
University College	1841-46	Mr. Cadge.	7	4	38	10	45	14
St. Bartholomew's	1846	Mr. Haig.	8	1	14	3	22	4
							174	41

Per centage of deaths to cases (taking equal periods of observation), 21·9.

"The great diversity which appears in the above table between the two equal periods of observation at University College Hospital, is a striking illustration of what has been termed a run of good or bad luck in the practice of the same surgeon, for Mr. Liston was the principal operator at the hospital during both periods; and it shows, also, how unsafe it would be, unless for a very long period, to rely on any particular hospital as a standard. The return of deaths from amputations at St. Thomas's is heavy, and I might have been justified in rejecting it as being of too private a nature to have the requisite authority; but, in order to prevent any cavil, or appearance of selection, it is retained; and, for the same reason, I have omitted the only other return of amputations which I have been able to find, as respects the London hospitals: objection may be made to it, because the mortality is much below the usual average. This return is from Guy's Hospital, and is mentioned by Dr. Fenwick in his elaborate paper on the statistics of amputation, in the 'Edinburgh Journal of Medical Science' for 1847. The period of observation is from 1843 to 1845; the cases are 36, and the deaths 4, or at the rate of 11 per cent. Were this return added to the others in the table, it would reduce the average of the London mortality to less than 20 per cent., or 1 fatal result in 5 amputations.

"The present mortality of the London hospitals is shown by the following tables, into which the several returns in the 'Medical Times and Gazette' have been condensed.

Table II.

Showing the Mortality from Amputaton of the Thigh, Leg, and Arm, performed under Chloroform in the London hospitals from June, 1855, to June, 1856, inclusive.

Hospitals.	Primary Amputation.		Secondary Amputation.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
St. Bartholomew's . .	1	...	23	7	24	7
St. Thomas's . . .	4	3	12	3	16	6
Guy's	15	10	34	3	49	13
London	11	2	13	4	24	6
St. George's . . .	6	3	15	5	21	8
University College . .	3	2	14	3	17	5
King's College . . .	1	1	8	3	9	4
Middlesex . . .	1	1	5	2	6	3
St. Mary's . . .	5	3	12	3	17	6
Westminster . . .	...	...	2	...	2	...
Charing-cross . . .	1	1	9	2	10	3
Metropolitan Free . .	...	...	2	...	2	...
Hospital for Sick Children	...	...	1	...	1	...
Seamen's	...	...	5	...	5	...
Marylebone Infirmary .	...	...	1	...	1	...
Total . . .	48	26	156	35	204	61

Table III.

Showing the Mortality from Amputation of the Thigh, Leg, and Arm, performed under Chloroform in the London hospitals during three years. from July, 1853, to June, 1856.

	Number of Cases.	Number of Deaths.
First year	144	57
Second year	150	50
Third year	136	41
Total	430	148

Average per centage of deaths, 34·4.*

* Several sudden deaths were reported as happening from chloroform in the London hospitals during this period, but none from its administration in amputations, though in

"It appears, by comparing these with the foregoing table, that the mortality in the London hospitals has increased, since the introduction of etherization, from 21 to 34 per cent., or, to vary the expression, instead of amputation being fatal in a less proportion than 1 in 4 of those operated upon, it now proves fatal in 1 in 3. Is not so enormous a sacrifice of life too high a price to be paid for anæsthesia, even granting that this cannot be otherwise obtained with perfect safety? Is life to be held as nothing when compared to pain?

"If the above tables required confirmation, a reference might be made to other statistical statements, which, though the numbers constituting them are too small to have much weight by themselves, may be usefully considered in conjunction with others having a more extended basis. Of this kind are the tables respecting etherization, that were published four years ago in America ('American Journal of Medical Science' for 1852), and certain notices which we have received of the surgery of the Crimean campaign. It is generally understood that the results of amputations were unfavorable during this war; and, though several other causes were in operation, there can be now no doubt that this want of success may in some degree be attributed to the use of chloroform. Dr. Gordon, who had medical charge of the second division of the army (in which, however, chloroform was not so much used as in the other divisions), informs us (see the 'Report of the Proceedings of the Crimean Medical Society') that the result of amputations was very favorable in the preceding war in India, and before etherization was in use. Of twelve amputations performed in his regiment during the Punjaub campaign, only one proved fatal.

"Allusion may also be made to a report of amputations performed under etherization, which was published in the 'Medical Gazette' some years ago by Dr. Snow; and as its purpose was very different from recommending caution in the administration of chloroform, it may be here referred to; although under other circumstances the fact of its being a private unauthenticated report would, in such an inquiry as the present, render it inadmissible. Betrayed, apparently, by Dr. Simpson's erroneously high estimate of the mortality in British hospitals before etherization was introduced, Dr. Snow did not hesitate to publish this report, in which the mortality from 55 amputations of the thigh, leg, and arm, amounts to 27 per cent., as a statement favorable to etherization. But when it is considered that none of the amputations in this list were primary, that at the commencement of the practice there was more selection of cases than has since obtained, and that several of them occurred in private practice—circumstances all highly favorable to recovery—the mortality from them must be deemed quite as high as that indicated by the reports in the 'Medical Times and Gazette.' Dr. Snow says he publishes this report in order to dispel the fears with which some surgeons may be troubled; as

the account of cases in the journal, the fatal terminations are occasionally spoken of in such terms as these, "vomiting continued until death," "death from collapse followed," "sank from shock during the performance of a primary amputation," "sank almost immediately after artificial respiration and galvanism had been resorted to without success."

well might a recruiting sergeant encourage to enlistment by enumerating our losses at the Redan.

"Although I have not, for certain reasons assigned above, made so accurate an examination of the statistics of the results of amputation in the provinces as in London, I have ascertained that they show an equal, if not a greater, comparative increase of mortality. This operation at some of the largest provincial hospitals did not formerly prove fatal to 15 in 100; the average mortality for the last two years and nine months (the whole period embraced by the returns) is 30 in 100.

"I am perfectly aware that the inferences drawn from these tables and numerical statements will not be acceptable to many members of the profession who have been using chloroform in every important operation; but I am unable to anticipate any valid objection that can be made to them. The point that was supposed established by Dr. Simpson's investigations, it must at once be acknowledged, is not so established; and, although there may be a difference of opinion regarding the exact correctness of the estimate in my first table of the mortality in the London hospitals before etherization was in use, this is a point of no importance. The great question is, not whether my table makes this estimate two or three per cent. higher or lower than it ought to be, but whether the mortality from amputation in the London hospitals, after all the improvement of late times, would have amounted steadily during the last three years to more than 30 per cent., or about a third of those operated upon, but for the continued agency of chloroform? If it be asserted that the mortality of the London hospitals has not increased, then it must follow that the returns we have had of the results of operations in former years have been most erroneous; that the long boasted superior salubrity of the London over the Paris hospitals was not authorised by the truth; and that our surgeons, though well aware of the comparatively trifling mortality after amputation in the country or in well-ventilated hospitals, whither most of the patients might have been sent, recklessly persisted in this fearful sacrifice of life."

Dr. Arnott finds further illustration in the statistics of lithotomy. "The deaths from lithotomy in adult patients before the introduction of chloroform were, according to our best authorities on the subject, in the proportion of 1 to $4\frac{1}{2}$, or 22 per cent. of those operated upon. What they are now, will appear by the following tables:

Table IV.

Showing the Mortality from Lithotomy performed on the Adult and under Chloroform in the London hospitals during the last year. from July, 1855, to June, 1856.

Hospitals.	Cases.	Deaths.
St. Bartholomew's	1	0
Guy's	3	2
St. Thomas's	2	1
London	1	1
St. George's	2	1
University College	2	1
King's College	3	2
St. Mary's	2	1
Metropolitan	1	0

Total cases, 17; deaths. 9; per centage of deaths, 52·9.

Table V.

Showing the Mortality from Lithotomy performed on Adults in the London hospitals during the last three years.*

	Cases.	Deaths.
First year	10	7
Second year	14	6
Third year	17	9
Total	41	22

Average per centage of deaths, 53·6.

"The fact that, instead of one in four operations proving fatal, the mortality should now be doubled, and amount to one half of those cut for stone, is so remarkable as to render any comment unnecessary."

Instead of being a means of saving life as well as of preventing pain, it would thus appear that chloroform has increased the hazard of amputation to so frightful an extent, as to make death probable in one out of every three cases, instead of in one out of four or five, as formerly, and to render recovery or death after lithotomy an equal

* "I am not aware that more than one death from the direct effects of chloroform has been reported as occurring in the London hospitals, but the following notice in the statistical return in connection with one of these cases at Guy's Hospital nearly amounts to such a report: 'The man required an unusual quantity of chloroform. He never rallied well from the operation, and death took place next day.'"

chance. Nor is it necessary that the argument of an increase of the unfavorable results of operations under chloroform should be insisted upon, for if there be no sufficient proof of a decrease of these results as a compensation for the numerous deaths which proceed from the direct and immediate effect of chloroform, the recommendation of its use, especially in the large doses employed in late years, could hardly be justified.

The treatment of Cancerous Diseases by Caustics. A critical inquiry into the modern therapeutics of cancer; being the Address in Surgery delivered at Birmingham on the occasion of the twenty-fourth annual meeting of the Provincial Medical and Surgical Association. By Langston Parker, Surgeon to the Queen's Hospital, Birmingham, &c. (8vo, London, Churchill, 1856, pp. 40.)

In this address Mr. Parker opens a subject in some measure new to English surgical practice, viz., the treatment of cancerous diseases by caustic or enucleation. A subject of which the importance will be allowed when we consider the vast number of cases of cancerous and cancroid diseases which annually destroy life, and when we reflect upon the absolute failure of the present surgical means and appliances for giving even relief in a great number of these cases. Having indicated the nature of those local cancerous growths in which operative measures alone are to be employed, and having glanced at two out of three of those procedures which are recognised by modern surgeons in the treatment of cancer—excision or ablation and compression—Mr. Parker proceeds to speak of the principal caustics which have been used in the treatment of cancer, and of their effect.

"The *chloride of zinc* is perhaps the caustic best known in this country, and the one now most commonly, though too rarely, employed in the treatment of cancerous or cancroid diseases. This salt, as a caustic in the treatment of cancer, was first introduced by M. Canquoin of Paris, in 1834, who, in that year and the succeeding, addressed two communications to the Academy of Medicine, stating the success which he had obtained in removing cancerous growths without the aid of the knife. The preparation, at first known as Canquoin's plaister, was soon ascertained to consist of about equal parts of chloride of zinc and flour made into a paste of proper consistence with water. In 1838, M. Canquoin published a complete account of his remedy, by which 600 cases of cancerous disease had been treated with a confessedly great amount of success. M. Canquoin, in his work, gives four formulæ for the preparation of the chloride of zinc paste. 1. Equal parts by weight of zinc and flour. 2. Zinc one part, flour two parts. 3. Zinc one part, flour three parts. 4. Zinc one part, muriate of antimony one part, flour one part and a half. Water from twenty to thirty drops to the ounce for each of these preparations. The first preparation, applied four lines in thickness for forty-eight hours, destroys the parts to the depth of an inch and a half. The same preparation three lines thick, applied for the same period, acts to the depth of about an inch only.

"The paste Nos. 2 and 3 are to be applied in carcinomatous ulcerations, which are not deep, but spread over a greater or less extent of surface. No. 3, on account of the greater dilution of the chloride of zinc, acts slowly and with a less amount of pain. No. 4 is combined with the chloride of antimony; this preparation when well made has the consistence of soft wax, and is particularly suited to growths which are uneven on the surface, to the inequalities of which it is easily moulded, and does not alter its form or run when applied. M. Velpeau* speaks very highly of the chloride of zinc as an application to cancerous ulcers and growths. It is a preparation easily manipulated; it possesses no action on the epidermis or on mucous membranes covered with epithelium; it may be moulded with the hand to any shape, form, or thickness; it does not fuse or run, its action being strictly limited to the surface to which it is applied. Its action again is expended on the parts which it touches; unlike the arsenical pastes, there is nothing to fear from absorption, its action being strictly limited to the local effects to which it gives rise.

"M. Maissoneuve, in his clinical lectures on cancerous diseases, gives very favorable testimony to the effects of the chloride of zinc, especially in reference to its application to large, fetid, bleeding cancerous or cancroid ulcers where the knife is utterly out of the question, and where the patient is sinking from local irritation and hemorrhage. M. Maisonneuve mentions a case in which an enormous cancer of this kind was entirely removed by the remedies I have mentioned. This case is quoted at page 63 of the first number of Maisonneuve's 'Clinical Lectures.'

* * * * * *

"I have used the chloride of zinc paste in several cases, which I shall hereafter detail, with a gratifying amount of success. The two chief objections which may be raised against the use of the chloride of zinc are the necessity of first destroying the epidermis before the remedy is applied; and, secondly, the pain occasioned by the prolonged contact of the caustic with the disease, which varies from a period of from twelve to forty-eight hours, according to circumstances.

"The pain, however, may be vastly diminished, if not entirely removed, by the application of ice and salt on the plan recommended by Dr. J. Arnott. I removed, by means of the chloride of zinc paste, a growth of the size of a walnut from the back of a lady, who had been twice operated on before with the knife for the removal of a similar growth in the same situation, without the remedy causing anything like severe pain. The moment the burning power of the caustic was felt a large bladder of ice and salt was applied, which entirely removed it in a few seconds—this was continued for a short time, and then removed; when the pain of the caustic began again, a fresh bladder similarly filled was applied, with similar effect, so that, although the caustic remained in contact with the skin for six hours, the pain experienced was of the most trivial character. I have tried this plan with other cases, with almost an uniform amount of success,

* 'Traité des Maladies du Sein, et de la Région Mammaire, &c.' Par A. Velpeau. Paris, 1854.

and I believe some modification of this kind, properly carried out, will effectually remove the chief evil attendant on the application of caustic remedies to the destruction of cancerous growths, which is the amount of prolonged pain they occasion. The chloride of zinc may be applied with a degree of precision unattainable by any other remedy, it destroys the tissues in direct relation with the thickness of the layer of paste applied; and this with a little practice may be calculated to a great nicety, it never runs or fuses, it destroys only those parts which it covers, and these it divides from the surrounding structures as cleanly as though they had been cut with a knife. The crust or scab formed by this caustic is hard, dense, and white, there is no sanguineous or other discharge produced by it. The eschar separates at the end of twelve or fourteen days, leaving a clean, healthy, granulating surface underneath.

"The *concentrated mineral acids* have been lately much employed as caustics in the treatment of cancerous diseases. I allude especially to the nitric and sulphuric acids. A set treatise on the use of one of these acids, the nitric, has been published by M Rivallié, in which monohydrated nitric acid is made into a paste with scraped lint or charpie. This M. Rivallié describes as solidified nitric acid. Many successful cases are given by this surgeon of the total and rapid destruction of cancerous growths by his method. M. Velpeau and M. Maisonneuve speak favorably of this preparation, the latter prefers it mixed with asbestos. It is neither so easily under command, nor so destructive as the concentrated sulphuric acid.

"Concentrated sulphuric acid, made into a paste with saffron, has been described by Velpeau and others under the title of 'black caustic' (caustique noir).

"In speaking of this remedy, M. Velpeau says: 'No caustic has afforded me similar advantages, its action is prompt, energetic, and deep, it is easily manipulated, gives rise to no sanguineous oozing like the alkaline caustics, nor to inflammatory reaction or swelling. One is sometimes surprised,' says this surgeon, 'to see a vast fungoid surface secreting daily an immense quantity of blood, and sanies converted in a few hours into a black crust, from which issues no moisture whatever.' 'It is,' says M. Maisonneuve, 'our caustic (de prédilection), of which I most frequently make use in the destruction of hard and large tumours.'

"'The day or day but one after its application, the surrounding integuments are neither red nor swelled, and hardly more sensible than the healthy skin. One would say, in fact, that the patient was already cured, and that the black crust reposed upon a cicatrix already formed.'—Velpeau, 666.

"The *alkaline caustics*, or those which have potass for their base, are powerful, effective, and manageable remedies in the treatment of many forms of cancer. The remedies chiefly applicable are the Vienna paste, or Heister's caustic, in the form of powder, composed of five parts of the hydrate of potass and six of quick-lime, rubbed together as a dry powder, and when applied mixed into a paste with a little spirit of wine; or the same remedy, now much in vogue on the Continent, consisting of the same ingredients, though in different propor-

tions, fused and run into leaden tubes, like nitrate of silver or potassa fusa. In this form the remedy is known on the Continent as the caustic of 'Filhos.'

"It is composed of two parts of potass and one of lime, and is a most convenient, active, and useful remedy. Its inventor chiefly employed it in destroying fungoid growths from the 'uterus,' what he terms 'fungoid ulcerations,' and which, according to the cases detailed by Dr. Filhos, appear to be varieties of epithelial cancers, some of them probably of the nature of what are termed 'cauliflower excrescence.'

"In a Clinical Lecture, reported in the 'Association Journal' for March 29, 1856, Dr. West reports a case of similar disease cured by the galvano-caustic, applied by Mr. Paget.

"This physician also remarks in the same lecture, that the chief cancerous or cancroid growths from the uterus are of the epithelial kind, and it is to precisely this class of cases that the caustic of Dr. Filhos is suited. By the application of this remedy, which I have frequently used, the diseased mass may be gradually rubbed away into a kind of putrilage or soap, with a very trivial amount of pain.

"The amount of pain produced bears no relation to the activity and destructive agency of the caustic in such cases. All the alkaline caustics have the effect of producing a sanguineous oozing from the parts to which they are applied. They are unlike the chloride of zinc and the mineral acids in this respect, which have the effect of coagulating the blood in the smaller vessels in the immediate vicinity of cancerous growths, whilst the alkaline caustics give rise to a sanguineous discharge to a greater or less extent."

Mr. Parker then refers to the escharotic which has been recently proposed by M. Llandolfi, and of which a notice will be found elsewhere in our present volume as well as in our last volume, and his judgment is more favorable than that of the commission of the French Academy. He says: "As a fluid caustic, used where pastes are inapplicable, I have had abundance of evidence of its utility."

The last-mentioned preparation is the arsenical caustic of M. Manec, of the Salpétrière, at Paris—a caustic which consists of one part of arsenious acid to seven or eight of cinnebar, and four of burnt sponge, made into a paste with a few drops of water. This is a caustic of great importance, and all that may be done by remedies of this class may be done, in all probability, by it and by the chloride of zinc, as modified by M. Canquoin. Even M. Lebert, not in general a great lover or advocate of caustics, speaks highly and confidently of the result of M. Manec's operation with caustics, and gives some instances of cases, supposed to be incurable, which were cured by him. Many cases are also on record in which arsenical pastes have succeeded after other caustics have failed, and this may probably be explained by the statement made by M. Manec, that the action of arsenic on cancerous tissue is not simply escharotic. According to this surgeon, indeed, arsenic has a peculiar destructive affinity for cancerous growths. "It is a remarkable fact," says he, "that this powerful remedy, which destroys thick morbid growths of compact structure, when applied in the same proportions to superficial corroding ulcers,

only destroys the morbid growth; however then it may be, its action does not extend to the healthy textures." This is a very remarkable and interesting statement. "M. Manec directs that the arsenical paste, when employed in the treatment of cancer, should not be applied to a surface of greater extent than the size of a two-franc piece (about the size of the English florin) at each application; the quantity of arsenic absorbed from such a surface never produces unpleasant symptoms. M. Lebert says he never saw 'serious symptoms follow the prudent application of Manec's arsenical paste.' It produces, however, marked local effects, with which the generality of surgeons are little acquainted. A few hours after its first application, a moderately severe pain is felt, and the neighbouring tissues swell and become inflamed; an erysipelatous blush surrounds the part: if the application is made on the face, the whole visage may assume a puffy appearance. These symptoms may remain for three or four days, and then gradually subside. The pain produced by the remedy may last longer, but this, I have shown, may be mitigated by the application, from time to time, of bladders containing ice and salt. The action of arsenic is not like that of other caustics, merely local; it pervades the whole system. Its presence, when applied in the form of paste to destroy a cancroid growth, may be detected in the urine in about twelve hours after its first application, and may continue to be detected during a period of eight or ten days; and it is not till it has totally disappeared from the urine prudent to reapply the paste, supposing a second application should become necessary. Thus any cumulative injurious effect of the remedy is entirely prevented. There are several formulæ extant for the preparation of arsenical pastes; I may especially mention those bearing the names of Frère Côme and Dupuytren. The latter, consisting of 2 parts of arsenious acid, and 200 parts of calomel, is generally too feeble as a destructive agent.* In fact, the form of Manec is the safest and the best, and the only one that ought to be employed, and may be used, with the precautions to which I have alluded, with advantage and safety. In speaking of the effects of arsenic, M. Velpeau makes use of these remarkable expressions: 'Two of the properties attributed to it,' says he, 'render its use preferable to that of all other remedies, supposing that such attributes are found correct. First, if it could be demonstrated, as asserted by M. Manec, that its destructive action is concentrated on the abnormal or morbid tissues only, it must be the most precious of all caustics; and second, if, when mixed with the blood, by absorption, as proved by its presence in the urine, it still preserved this elective action for the destruction of morbid cancerous tissues, would it not, by thus decomposing or destroying the ultimate molecules of the disease, thus place the patient out of the fear of future relapses?' Here in fact is the whole point on which the treatment of cancer hangs; it is not the extermination or destruction of the malady locally, which is so much the question, as the prevention of its reappearance. If this is ever to be done, it must and will be done by the action of chemical remedies on

* Dupuytren varied these proportions. The late Mr. Samuel Cooper said, 4 parts of arsenious acid and 96 of calomel. The latter employed it with complete success. ('Surgical Dictionary,' article, Arsenic.)

cancerous growths, and the subsequent mixture, by absorption, of these remedies with the blood; much has been proved in this respect, in reference to arsenic, for M. Lebert tells us that he carefully watched some of Manec's cases for several years, with this view, but no relapse took place. I must quote another passage from M. Velpeau, in support of this opinion He says, 'It is not impossible that the potential caustics may determine in the surrounding tissues an important modification, and it is equally not impossible that they may consequently better prevent the extension or return of the cancerous principle than excision. Again, as they do not, so much as cutting operations, place the life of the patient in danger, I am far from rejecting their employ.' "—(p. 676.)

In pointing out in what class of diseases, in what situation of disease, in what stages of disease, caustics are particularly indicated, Mr. Parker says, "In most cases, where a cancerous tumour is circumscribed, moveable, and uncomplicated, where the integuments covering such tumours are healthy, or only very slightly diseased, where the malady springs from the bone or periosteum, or where these are more or less implicated, in diseases which are of a cystic character, or those again which are placed in the vicinity of, or immediately connected with, large blood-vessels, the knife is preferable. These remarks apply also with greater force if the disease is primary.

"In open or ulcerated cancers, or cancroid growths generally, especially if situated on the skin, the lips, the tongue, or the uterus, where the patient appears sinking from the local symptoms of the disease, such as frequent hemorrhages, profuse and fetid discharges, where also a great extent of surface is destroyed, caustics are generally preferable; and numerous cases of success might be quoted from my own practice, and from the authorities I have referred to in the course of this address, where caustics have brought about the cicatrization of cancerous ulcers, when all interference with the knife was utterly out of the question." Contrary to an opinion expressed on a former occasion, Mr. Parker is now of opinion that caustics are perfectly applicable to the treatment of cancer or cancroid of the tongue. Again, caustics are eminently useful in secondary cancerous formations.

Mr. Parker does not advocate the use of caustics to the exclusion of the knife, but he evidently thinks that caustics are more likely to secure the destruction of cancerous growths, and so to prevent the return of the disease, than is the knife. In reference to this point, Mr. Parker quotes M. Velpeau, who says, "I have frequently employed caustics in the treatment of cancer, and I have frequently thought, I must confess, that they have more certainly prevented secondary cancerous affections in the neighbouring lymphatic glands than extirpation with the knife."—(p. 659). "I have twice seen," continues M. Velpeau, "voluminous and indurated glands in the axilla diminish in a remarkable degree, during the period I was destroying a cancer of the breast by caustics, and I have observed the same effect in the sub-maxillary glands, whilst cancers or cancroid diseases of the lower lip were treated in a similar manner. The action of caustics is chemical and destructive, and doubtless their action extends to some distance into the surrounding tissues beyond

the exact line where their destructive agency is defined on the skin." Again, "M. Lebert, a great authority on cancer, speaks of what he terms a compound operation in the removal of cancerous and cancroid diseases, and this practice is evidently again a recognition of the principle I have just indicated, which shows that it is difficult and even impossible to remove the disease by excision; and therefore he says, speaking of cancer of the skin, in which he not only sanctions, but recommends the employment of caustics, 'The combination of excision and cauterization frequently brings about results which we obtain with difficulty by either method employed separately.' What this means is clearly, that after the bulk of the disease has been removed by excision, the surface thus exposed is to be treated by escharotics, with a view of destroying the cancerous nuclei or cells, which may be infiltrated through, or in process of formation in the neighbouring or immediately surrounding tissues."

In concluding this very admirable and instructive address, Mr. Parker says, "I esteem very highly the class of remedies I have been considering, and I think many lives may be saved, and will be saved, by their judicious employ. I have used these remedies in many cases with a gratifying and encouraging amount of success. They can be used where the knife cannot, and in relapsed cancer they are especially serviceable."

On the use of Auscultation in Aural Surgery. By M. Gendrin. (Gazette Médicale de Paris, Sept. 6, 1856.)

The following letter describes a new and apparently happy application of auscultation for the detection of deep-seated mischief in the organ of hearing. It is addressed to the President of the Académie des Sciences by M. Gendrin.

Sir,—I beg to call the attention of the Academy to a mode of investigating deep-seated mischief in the ear which I have often put in practice during the last ten years—namely, direct or indirect auscultation over the ear itself. I apply the ear or else the stethoscope to the ear, and listen to the sounds produced in the interior of the organ by breathing, coughing, speaking, whistling, &c., and from the abnormal modifications of these sounds I form an opinion as to the nature of the mischief present, if mischief there be.

In the natural condition each expiration produces in the ear a low, soft, and distant "bruit de souffle," which dies out before the end of the expiratory movement. If the drum of the ear be perforated this sound becomes acute, dry, sometimes even sibilant, and always more prolonged. Is the Eustachian tube contracted? In that case the respiratory sound becomes as it were intermittent, and in the majority of cases the passage of the air, through mucous contained in the tube or in the cavity of the ear, causes the bruit to be accompanied by crepitation. Crepitation is also heard if there be caries of any of the parts belonging to or communicating with the internal ear.

These expiratory sounds are rendered more marked by the shock of coughing.

Inspiration does not produce any obvious sonorous vibrations in the

healthly ear. But if the drum is perforated, the tube being permeable, one hears in the ear during inspiration, a very acute souffle sibilant accompanied with hurried crepitation, of which the patient himself is frequently conscious.

The voice as it sounds in the ear is deepened in tone and somewhat vibrating; and the words, and sometimes the syllables, sound as if detached from each other. But if the tube is contracted, or if the cavities of the ear are filled with mucus or pus, or otherwise obliterated, the voice degenerates into a confused and inarticulate murmur. If the tube is altogether obstructed the voice fails altogether to reach the ear. On the other hand, it is whistling, and accompanied by crepitating rales if the drum be defective.

In the healthy ear the sound of whistling is heard as an acute souffle sibilant coming from far. If the Eustachian tube is narrowed, this souffle is enfeebled and interrupted by intervals of silence; if the tube is obliterated the souffle is entirely extinguished. But in cases where the tube is open, and the drum defective, the whistling becomes very acute and close—it seems to the auscultator as if the patient whistled in his ear.

In the majority of cases it is easy to ascertain the reality of these abnormal sounds by listening at the other ear, for it rarely happens that both ears are affected to the same extent.

I have the honour to be, &c.

Deligation of the Abdominal Aorta. By Mr. South, Senior Surgeon to St. Thomas's Hospital. ('Lancet,' July 12th and August 23d.)

Unquestionably, the operation of tying this great vessel is one of appalling magnitude, and so rarely is it adopted that we may hail it as an event in the annals of surgery whenever it is done. This was the celebrated operation of Sir Astley Cooper, which in his day created an interest of the most intense kind in the mind of every surgeon. It has not hitherto been selected in the cases that have been recorded, unless as a last resource, and justified by the most trying and urgent circumstances. Sir Astley Cooper was the first surgeon who applied a ligature to the aorta in the living subject—upon a porter, aged 38, at Guy's Hospital, in 1817. This case will ever stand as one of the most remarkable in the annals of surgical science. His patient survived forty hours. He made an incision three inches long in the linea alba, giving it a slight curve to the left, to avoid the umbilicus; one inch and a half was above, and the remainder below the navel. The peritoneum was then cut through, and by scratching with his nail at the root of the mesentery, he was enabled to insulate the artery and carry a thread round it.

A precisely similar operation was performed by Mr. James, of Exeter, whose patient survived three hours and a half. In a third example of ligature of this great vessel, at the Cape of Good Hope, Dr. Murray tied it, without opening the peritoneum, making his incision from the jutting extremity of the tenth rib, continuing it downwards about six inches, and curving backwards to an inch from the

upper front of the hip-bone. The aorta was easily reached, the peritoneum being separated with the flat of his hand from the internal iliac and psoas muscles. His patient survived twenty-three hours after the operation. In the 'Abstract,' vol. XVII, p. 148, a fourth case is recorded, the operation being performed at Rio Janeiro, by Dr. C. B. Monteiro, the patient surviving till the tenth day, when he died from secondary hemorrhage from a small opening on the left side of the vessel immediately above the ligature. Mr. South's makes the fifth case, with a survival of forty-three hours. Monteiro's case therefore was the most successful. Three out of the five have been done in England—the first and the last at the Borough hospitals, where the preparations are to be seen in their respective museums.

The following were the forms of aneurism in the five cases for which this formidable operation was attempted: 1. Aneurism extending four inches above and as many below Poupart's ligament; affecting the left iliac artery. 2. Aneurism of the external iliac artery. 3. Very extensive iliac aneurism. 4. Spurious aneurism of the femoral artery, formed by the bursting of that vessel; a large swelling occupying a great portion of the right under part of the belly. 5. Aneurism of the external and common iliac arteries, occupying a very considerable portion of the right half of the abdomen.

The late Mr. Guthrie, held that it is quite unnecessary to tie the aorta in any case, because, in an aneurism of the external or internal iliac arteries, the common iliac on the diseased side can always be got at—and if not there, yet on the healthy side—for the purpose of carrying a ligature around it. In these views the late Samuel Cooper coincided with Mr. Guthrie. If these cases are analysed, it will be found that this operation was justifiable in this instance, as in Mr. South's patient only did the tumour extend absolutely pretty close up to the bifurcation of the trunk of the aorta; and to so great a magnitude had it arrived, that it would have been next to impossible to have tied the common iliac above the aneurism. This can be seen by a careful examination of the specimen in the museum of St. Thomas's Hospital. Several consultations were held by Mr. South with his colleagues on the urgency of the case, and the question was anxiously considered as to the propriety of the operation, and we believe most, if not all, inclined towards giving the poor man the benefit of the operation. In Sir Astley's case, the operation was a sort of forlorn hope, because the patient was reduced to the very point of death by hemorrhage from an iliac aneurism. In Mr. South's, this was not so; but the symptoms were becoming so urgent from other causes, that a suddenly fatal result might at any moment occur; immediate interference, therefore, became a matter of actual necessity. It is hardly possible to expect a permanently successful result from the operation, but circumstances may arise to justify its performance; thus prolonging life for a few hours or days, and giving the patient a little time to settle his worldly affairs.

Case.—On the 21st of June, Mr. South ligatured the trunk of the abdominal aorta, a little above its bifurcation, for a large aneurism of the external and common iliac arteries of the right side, in a strong, healthy, and apparently robust young man, aged twenty-eight years.

The aneurismal tumour filled the right iliac and lumbar regions, and occupied a considerable portion of the right half of the abdomen, rising above the umbilicus, nearly as high up as the cartilages of the ribs, and extending close to the median line. Pulsation in the tumour could be felt with great difficulty, but by the stethoscope a very distinct aneurismal bruit could be heard; sensation was almost completely lost in the whole of the right leg, in consequence of the pressure exercised by the tumour on the nerves emerging from the pelvis on that side. The aneurism had existed for some months, and the young man had been an inmate of St. Thomas's Hospital for the past few weeks. The early history of the case was somewhat obscure, but he had been subject to employment of a very laborious and fatiguing kind. During his stay in the hospital it had increased rapidly in size, and was extending in every direction; it became necessary, therefore, to have recourse to surgical measures without delay. The question of tying the common iliac was discussed by Mr. South, Mr. Green and his colleagues, Mr. Solly, Mr. Simon, and Mr. Le Gros Clark. The uncertainty as to whether the common iliac was involved, and also the difficulty of getting at it, from the large size of the tumour, induced Mr. South to select the operation of deligating the aorta, which was done with the assistance of his colleagues, in the presence of a large number of students from the various London hospitals, and many eminent members of the profession.

The left side of the abdomen was opened by an incision, commencing a little above the anterior superior spinous process of the ilium, and extending upwards to the cartilage of the tenth rib. The various intervening structures were severally cut through until the peritoneum was reached, which membrane was carefully raised by Mr. Green with his hands, and the wound kept open, whilst Mr. South passed a ligature around the aorta, from the right to the left side. There was very little time lost in the performance of this highly important operation, which was effected in a very beautiful and satisfactory manner, in consequence of the extremely quiet condition of the patient, who was completely under the influence of chloroform.

This was done at two o'clock on Saturday, the 21st of June. The young man went on remarkably well after it; but he died at nine o'clock on the morning of Monday, the 23d, having survived the operation forty-three hours. At the autopsy, the tumour was found to be a false and diffused aneurism, depending upon disease of the coats of the iliac artery, with, we believe, laceration.

Varicose Veins; their nature, consequences, and treatment, palliative and curative. By Henry T. Chapman, formerly Surgeon in the St. George's and St. James's Dispensary. (12mo, Churchill, pp. 99. 1856.)

This monograph, for the most part, consists of a reprint of several papers, which have already appeared in the 'Medical Times and Gazette.' It is divided into two parts. In the first part, the author concerns himself in succession with the definition of varix, the struc-

ture and function of the saphenæ, the origin and progress of the morbid changes of structure in, and the consequences of varix; and under each of these heads he presents us with an abstract of the most authentic details we possess on the subject. As one of the causes of varix, we may mention in passing, much stress is laid upon inflammation of the venous tissues, and very properly so. Passages are cited from Hasse and Rokitansky which clearly specify dilatation as an ordinary result of phlebitis; and others which speak no less positively of chronic phlebitis as a consequence of dilatation. In Hasse's work, however, the admissions are only to be found under the head of "Chronic Phlebitis," and there is no allusion to the malady as occurring in the chapter treating of the causes of varix. Rokitansky, it is true, includes inflammation of the vein in his catalogue of the cause of phlebectasis; but he mentions it quite incidentally, as a possible source of the disease. Indeed, Mr. Chapman is the first to *call* attention to the intimate connexion which exists between dilatation and inflammation of the venous walls.

In the second part of the monograph, the subject of treatment is very carefully considered, and any practitioner may learn a good deal from what is there presented to his notice. In this part, the author sets himself to show, in the first place, that varix is not to be cured by obliterating the diseased vein; and after this he proceeds to speak of palliative and curative measures, the end of the argument being to show that the best means of curing varix is by wet strapping and bandaging. Plaster strapping is objected to as apt to heat, inflame, and excoriate the parts to which it is applied. Then (speaking of the curative treatment of simple uniform varix) the author says:

"I have for some years entirely abandoned plaster-strapping, in the treatment both of ulcers and of varicose veins, in favour of the following very simply constructed bandage, which possesses all the advantages of plaster strapping without its inconveniences:

"Placing the patient on a low seat, and elevating the foot until the veins empty themselves by the gravitation of the blood towards the trunk, I apply wet straps of linen, or calico, precisely in the same manner as Mr. Scott applied adhesive plaster. The bands for this purpose should be from two to three inches in width, and from twelve to sixteen in length, stout enough to prevent them tearing easily, but not too thick. Adjusting the middle of one of the shorter and narrower of these bands, previously soaked in water, just above the heel, the two ends are brought forward over the ancles, drawn tightly, and crossed upon the instep. The middle of another is placed beneath the sole of the foot, its extremities brought up firmly over the instep, and laid down smoothly one upon the other. A third is applied, like the first, from behind forwards, but a little higher; and thus, ascending the leg, the process is repeated with the rest of the bands, each one in succession overlapping the upper half of that below it, until the limb is firmly and evenly cased to the knee. Over the straps a calico roller is carefully put on, the greatest attention being paid to its equable adjustment, so that the pressure may be uniformly distributed over the entire limb.

"Through its texture the course of the varicose veins should be moistened several times daily with cold water, diluted Goulard lotion,

or solutions of alum, sulphate of zinc, or chloride of lime. Whenever the bandage is taken off for renewal, the dilated veins should be subjected to brisk friction, upwards, with the hand for some time, and a douche of cold water poured over them, the foot being kept in an elevated position until it is re-applied. In winter, and when patients are elderly, or delicate, the free application of cold water or lotions is not always safe, and this part of the treatment must of course be left to the discretion of the surgeon. It is better, under such circumstances, to confine the astringent influence of cold strictly to the vessels affected.*

"No one who has not tried this mode of bandaging can form an estimate of the power of adhesion possessed by the wet strapping, or the amount of steady, even support it is capable of affording. In these respects—as I have elsewhere stated, when advocating their employment in the treatment of ulcers and cutaneous eruptions on the leg—their action is in no degree inferior to that of plaster, at the same time that the softness of the material allows of its closer adaptation to the inequalities of the limb, and precludes all risk of cutting or excoriation, accidents so common when plaster strapping is made use of, that its contact could never be borne long enough to produce any permanently good effect.

"The wet straps are especially serviceable in compressing the bulk of the soft parts before the application of the roller, and they give the latter a much better hold than it can take of the bare skin, or even of plaster, thus materially diminishing the chance of the roller slipping. Their greater permeability, again, admits of the more efficient use of lotions; and their cheapness, when compared with diachylon, or any other kind of plaster, is no slight recommendation. Unless displacement of its turns should occur earlier, or uneasiness be felt at any point, if the skin be sound the bandage need not be renewed before the fourth, fifth, or sixth day of its application; indeed I have frequently left it undisturbed for a fortnight or three weeks.

"In cold weather a flannel roller is preferable to one of calico in all respects. It is quite as elastic as Churton's cotton-web bandage, supports the veins more firmly and comfortably, and is not liable to rope. In summer, or with patients who find both flannel and calico heating, I employ rollers of coarse mull muslin, which are light and cool, and give as much support as calico.

"Although an elastic stocking, employed alone, may sometimes arrest the progress of varix in its earlier stages, it can never be regarded as a curative measure. In fact, the heating properties of the material rather augment the tendency to dilatation; and as the ordinary pressure exercised by it but partially empties the veins of blood, lateral expansion in a saccular or serpentine form will often go on beneath the stocking.

* A curious fact, mentioned by M. Parent Duchatelet, in his paper on the health of the "Débardeurs" of the Seine ('Annales d'Hygiène publique,' t. iii), practically exemplifies the astringent influence of cold in maintaining the contractility of the venous tissues. Inquiring how far this class of workmen—whose legs are plunged in water for many hours daily—were subject to ulcer, he ascertained that, contrary to the general belief, they were not only unusually exempt from that troublesome complaint, but their lowe extremities were also remarkably free from varicosities, œdema, and swelling.

When combined, however, with wet strapping, its efficiency is very considerably enhanced. But in order to derive the full advantage from this combination, the dimensions of the leg, for the stocking, must be taken after the wet strapping has been worn for some days, and the limb has been reduced a trifle below its natural size. Patients, accordingly, who are unable, or who will not take the trouble, to bandage a varicose leg in the manner set forth above, may adopt the alternative of an elastic stocking drawn on over a casing of wet strapping."

Afterwards, when speaking of the curative treatment of saccular, vesicular, and serpentine varix, the author adds:

"In cases of long standing and more aggravated character, where great tortuosity, saccular expansions of the main trunk and larger branches (numerous clusters often sprouting from these latter), and vesicular enlargements of the cutaneous veins exist, the support, distributed over the general surface of the limb by the wet straps and bandage alone, not entirely emptying the diseased veins, will do little more than palliate the complaint.

"To direct the pressure, therefore, effectually upon those points where it is most called for, I have recourse to compresses of lint, or spongiopiline, in combination with the bandage, large enough to cover the chief clusters and each of the sacculated portions of the vein separately, and thick enough to close their channels. These compresses, moistened in cold water or astringent lotions, are placed on the most salient dilatations, and the straps and bandage carried over them. Many of the varicosities rapidly disappear; others require the maintenance of the compression for a longer period; and in serpentine varix, especially, the process of reduction is occasionally very tedious.

"In saccular expansion and mulberry-like vesicular clusters in the skin, I seldom rely, for the completion of the cure, on the mere diversion of the circulation into other channels. Taking advantage of the known tendency of the lining membrane of the veins to adhesive inflammation, I endeavour to obliterate all lateral pouches, and vesicular protrusions through the skin, by submitting them to a high degree of pressure, so as to maintain their opposite surfaces forcibly in contact,—no very difficult matter when they happen to be situated over a bone; but when they lie upon the soft parts of the calf, as is most frequently the case, they recede beneath the pressure of the ordinary compresses, and require some more unyielding substance to close their cavities entirely. To meet this difficulty, I make use of the leather cones with which billiard cues are tipped, or smooth wooden or ivory buttons, choosing a size corresponding with that of the varicose pouch; and, for the blue cutaneous vesicles, glass or porcelain shirt-studs. The former are readily retained *in situ* by lint compressses and the bandage; the latter I insert into a small slit or button-hole in one of the wet straps, and carefully adjust it to the pit in the integument through which the vesicle has protruded; and, either by producing cohesion of their entire walls, or closure of the narrow neck connecting them with the vein, and coagulation of their contents, I generally succeed, ere long, in effacing both large and small cells.

"Where the saphena in the thigh, as well as the branches below the knee, are diseased, the pressure from within upon the walls of the latter will be more than doubled by the superadded weight of the column of

blood in the former. Until this dilating force from above be neutralized, no rational expectation of permanently reducing the enlarged veins to their natural size can be entertained. At the same time, therefore, that the several remedial measures described above are brought to bear upon the yielding branches, the dilated trunk ought also to be effectually supported. As, however, it is not possible, by any form of bandage, to exercise the same degree of equable compression upon the veins of the thigh as on those of the leg, I never attempt to carry the wet straps and roller above the knee; but, leaving them to counteract all undue accumulation below, I trust to Mr. Startin's elastic riband, wound spirally round the thigh from the knee to the groin, to divide the column of blood in the dilated trunk, and take off its downward pressure upon the branches; and I have more than once had occasion to observe that, by the time the veins of the leg are restored to a healthy condition, the dilatation of those of the thigh has, likewise, materially diminished."

These remarks are illustrated by some instructive cases.

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

On the duration of Pregnancy, and the calculation of the date of Confinement. Is Dr. William Harvey or Dr. William Montgomery in the right? By J. Matthews Duncan, M.D. ('The Edinburgh Medical Journal,' Nov., 1856.)

Dr. Duncan's object in this article is to defend the opinions of Harvey, to reaffirm the conclusions at which he arrived in 1854 (*vide* 'Abstract,' XIX, p. 332) on the ground of the data afforded by Dr. Montgomery, and to show that Dr. Montgomery's assumption of 280 days as the natural period of human gestation is, to say the least, unfounded.

The duration of pregnancy.—The period generally recognised under this name, and discussed by Dr. Montgomery, does not measure the real duration which extends from conception to parturition, but that other period extending from fruitful connection to parturition. It is this latter of which we now discourse.

Dr. Montgomery describes the natural period of human gestation as 280 days. Now, there is no such thing known to obstetricians to exist in nature, as a natural period of pregnancy, measuring a certain number of days This interval between fruitful coitus and parturition, is known to us only as a variable period, of uncertain length, in different individuals, and in the same individual on different occasions. So far is Dr. Montgomery from having any authority for fixing 280 days as the natural period, that, in his own laborious collection of fifty-six cases, in which, he says, the day of fruitful intercourse was known, there are only four in which parturition certainly occurred on the 280th day. Obstetricians can only speak with propriety of an average duration. This is attainable by striking it from the largest collection of well-ascertained cases. This average is the nearest approximation that can be made to what may be called the natural period of gestation. The data afforded by Dr. Montgomery for arriving at this mean or average, or nearest accurate general statement of the interval between fruitful connection and parturition, the duration of pregnancy, are of different degrees of value.

The most trustworthy and valuable are undoubtedly those of a

pregnancy which dates from a single coitus. They number twenty-five, and the duration of each is as follows:—263, 264, 265, 265, 267, 270, 271, 272, 273, 274, 274, 274, 274, 274, 275, 275, 276, 276, 275 or 277, 277, 278, 280, 280, 287, 291 to 293. Of these twenty-five cases the mean is 274 days. The best data accessible to Dr. Montgomery, then, give 274 days as the duration of pregnancy, not 280.

It appears that the next most valuable data for settling this point are to be found in the table of thirteen cases dating from the day of marriage. The interval between marriage and parturition in each of these cases was as follows:—261, 265, 268, 269, 270, 271, 271, 271, 272, 273, 274, 279, 291. In regard to these, Dr. Montgomery himself says:—"The average interval between the day of marriage and that of labour was 272 days q. p., or thirty-nine weeks, minus one day; or, if we deduct the last case, which went to 291 days, the average interval would be 270⅓ days." Where, then, one naturally exclaims, are the grounds for saying that the natural duration of pregnancy is 280 days?

Dr. Montgomery's work presents us with another table of data. It consists of fifty-six cases, in which, he says, the day of fruitful intercourse was known. Now, to us, this table, at first sight, and before estimating the results of it, appeared to be of less value than either of the two former. Every case, almost, is invalidated, because we do not know the authority or grounds upon which it is said that the day of fruitful intercourse was known. We do not know even the observers' names. Dr. Montgomery has laboriously collected cases of protracted pregnancy, all of which, so far as available for this table, find place in it. The whole weight and importance of it is contributed by the distinguished obstetrician's name that publishes it. That authority is, undoubtedly, of the very highest, but can scarcely be communicable to cases derived from a promiscuous set of observers, whose reasons for decidedly fixing on a single day are not given. In an exact investigation like this, all cases should be rejected except those dating from a single coitus, or coitus on a single day. But let us examine and see what this table affords towards the solution of our question. Omitting six cases where a single day is not given, we have fifty where the interval between fruitful intercourse and parturition is said to be as follows:—242, 258, 258, 263, 265, 267, 267, 267, 267, 268, 269, 269, 272, 273, 273, 274, 274, 275, 275, 276, 277, 277, 278, 278, 279, 279, 279, 279, 279, 280, 280, 280, 280, 281, 283, 283, 284, 285, 286, 287, 287, 287, 288, 290, 291, 291, 292, 293, 293, 297. Of these fifty cases, all those satisfactorily known to Dr. Montgomery, the mean duration is 277 days. This table, framed under the conditions above described, yields a result opposed to the dogma of its author. Where, then, is the authority for stating 280 days as the natural period of gestation? It is nowhere.

We agree with Dr. Montgomery in his opinion that there is no other satisfactory method of arriving at the solution of this question, but the one we have just followed, viz., the collection of well ascertained facts, and their analysis. "Independently," says he, "of the very few cases in which we have satisfactory evidence of conception following casual intercourse, or perhaps a single coitus, we have no

certain means of knowing exactly the commencement of gestation, and are obliged to form our calculation on one or other of three very fallacious grounds;" which he then proceeds to consider.

The calculation of the day of confinement.—In the vast majority of cases this must be made from the termination of the last menstruation, for reasons which are well known. The average time to which a woman goes, after the last appearance of the menses, is 278 days (a period shorter than Dr. Montgomery's duration of pregnancy!). This average is obtained by the collection of single observations, and their subsequent analysis. If, then, we wish to ascertain the most probable day of a woman's confinement, we add 278 days to the last day of the last menstruation.

Dr. Montgomery gives no specific directions for making this important calculation. But it appears, from some passages occurring incidentally in his essay, that he adopts the following plan. Some day is selected after last menstruation, as the most probable day of fruitful intercourse, and 280 days are added thereto. As the selection of this day must be, in almost every case, made on the most worthless and insufficient grounds, the resulting calculation must be similarly characterised. Besides, if there be any truth in the statistical data of Dr. Montgomery, and their analysis given above, which is partly his own, then this plan of his must lead to a putting off of the probable day of confinement to far too distant a time. For instance, we have in the table of observations dated from the day of marriage, thirteen cases on Dr. Montgomery's own authority. Now, in these, as already stated, the women went, on an average, only 272 days from the day of the nuptials. If a probable day of fruitful intercourse, after marriage, had been selected, and 280 days added thereto, in these cases, such a plan would have evidently led to a mass of errors in the way of putting off the predicted day of confinement far too long.

With the subject of this important calculation or prediction, Dr. Montgomery has confounded the question of the interval between insemination and conception. If such an interval existed, he says, "we should have no means of calculating the period of gestation with anything like an approximation to accuracy, in any case." Now, if there be an interval in nature between insemination and conception, we must adopt it, whatever results it may lead to. If it truly exist, it can lead only to true and good results. It is not considered probable by Dr. Montgomery that any interval, or an interval of any importance, does exist. The highest authorities, however, on such a point, are unquestionably very strongly in favour of the belief in its existence, and its being of considerable extent, say several days. But, in truth, this question of a possible interval between insemination and conception has nought to do with the calculation of the date of confinement. Its truth or untruth does not affect such calculations, and no author but Dr. Montgomery, has, so far as Dr. Duncan knows, discussed the two points as conneeted with one another in any way tending to modify practical precepts.

Harvey's opinions.—Great men often seem to arrive at the truth, even in circumstances of complication and difficulty, by some process so simple that it appears like an operation of instinct. The immortal

Harvey's expressed opinions in regard to the duration of pregnancy, and the calculation of the day of confinement, bear this character, for we cannot discover the grounds on which he arrived at results so nearly identical with those of modern science.

The interval between the festival of the Annunciation and the day of the Blessed Nativity is that adopted by Harvey, as unquestionably the ordinary term of utero-gestation. This is a period of 275 days, lady-day, or the festival of the Annunciation, being on the 25th of March, or 80th day of the year, while the day of the Nativity is the 25th of December, or 360th day of the year. It is remarkable, that the largest recent collection of cases, made on certain or on the best grounds, gave also an average result of 275 days. Harvey, it will be observed, does not speak of any natural term, but only of the ordinary term, his correct appreciation of which is clearly indicated.

Harvey guards, also, his rule for calculating the day of confinement from being considered exact, by saying that those prudent matrons who follow it "are rarely out of their reckoning." His statement is, that after ten lunar months have elapsed from the commencement or appearance of last menstruation, they fall in labour the very day the catamenia would have appeared had impregnation not taken place. If the usual or average computation of the menstrual periods and intervals is adopted, the period of Harvey is 280 days, including the number of days of the last period. Ten times the usual interval and period of discharge, that is, ten time 28, gives 280 days; but as this includes the last period, of course the three, four, or five days of that period have to be taken from the 280 days, if we wish to find the interval he allowed between the end of last menses and parturition. Thus, Harvey gives prudent matrons only an approximative calculation. The interval between last menstruation and parturition, according to him, is something a few days less than 280. The average time found by modern calculations, as stated in an early part of this paper, is 278 days, with which Harvey's rules are as nearly in accordance as can be expected in a subject altogether incapable of any exact statement.

Lectures on the Diseases of Women. By CHARLES WEST, M.D., F.R.C.S., Physician Accoucheur to St. Bartholomew's Hospital, Examiner in Midwifery to the Royal College of Surgeons of England, &c. Part I. Diseases of the Uterus. (8vo. London, Churchill, pp. 306, 1856.)

These lectures, Dr. West tells us, are a first instalment towards the discharge of a debt which the opportunities of a hospital, and the responsabilities of a teacher have imposed upon him, and as such they demand our careful consideration.

Passing over the first five lectures, then, which are devoted to diseases for menstruation, and which, though useful to medical students, contain nothing but what all well-informed practitioners are acquainted with, we come to three lectures on inflammation and ulceration of the womb; six, on uterine displacements; four, on uterine fibrous

tumours and three (the last) on malignant uterine diseases. Now, as the profession is pretty nearly united on the subject of cancerous complaints, we shall not refer to that portion of Dr. West's work, nor to that on uterine tumours, upon which opinions and practice are but little divided; and we shall reserve our space for two important subjects, upon which the profession is divided by conflicting testimony,—uterine inflammation and uterine displacements.

One of our distinguished pathologists is gifted with so keen a power of vision. that he can detect ganglia and nerves which are concealed from the view of other anatomists, but whose sight seems to fail him when looking at the neck of the womb, inasmuch as he affirms having never noticed any ulceration there, that was not either syphilitic or scrofulous. But this is not the case with Dr. West, who finds uterine lesions to be so frequent, that he considers them of comparatively little moment. The result of his experience on this point is set forth in the following table:

TABLE,

Showing the chief Results of the Examination of Sixty-five Uteri.

Uterus healthy in		36
„ diseased in		29
Ulceration of os uteri in . .		17
„ existed alone in . .	11	
„ with diseased lining of uterus in .	3	
„ with induration of walls of uterus in	3	—17
Induration of walls of uterus, without ulceration of os		5
Disease of lining of uterus, without ulceration of os .		7
Total of diseased uteri . .		29

Dr. West's conclusions respecting the pathological import of uterine lesions are thus given:

"1st. Uterine pain, menstrual disorder, and leucorrhœal discharges—the symptoms ordinarily attributed to ulceration of the os uteri—are met with independently of that condition almost as often as in connection with it.

"2d. These symptoms are observed in both classes of cases with a vastly preponderating frequency at the time of the greatest vigour of the sexual functions, and no cause has so great a share in their production as the different incidents connected with the active exercise of the reproductive powers. But it does not appear that ulceration of the os uteri exerts any special influence either in causing sterility or in inducing abortion.

"3d. While the symptoms are identical in character in the two classes of cases, they seem to present a slightly increased degree of intensity in those cases in which ulceration of the os uteri exists.

"4th. In as far as could be ascertained by careful examination, four fifths of the cases of either class presented appreciable changes in the condition of the uterus—such as misplacement, enlargement, and harden-

ing of its tissue, while frequently several of these conditions co-existed. An indurated and hypertrophied state of the cervix uteri was, however, more frequent in connection with ulceration of the os uteri than independently of that condition.

"5th. The inference, however, to which the last-mentioned fact would seem to lead, as to the existence of some necessary relation—such as that of cause and effect—between ulceration of the os uteri and induration of its cervix, is in a great measure negatived by two circumstances.

"1. That in numerous instances an indurated cervix co-existed with a healthy os uteri.

"2. That while in many of the cases in which induration of the cervix existed, the ulceration of the os was very slight, induration was entirely absent in other instances where the ulceration was noticed as having been very extensive.

"Since, then, we find that a very great degree of resemblance exists between the two classes of cases; that women of the same age, in similar circumstances, present the same symptoms, leading to the same results, having the same duration, and attended with similar structural changes, whether ulceration of the os uteri is present or absent; it may fairly be inferred, that ulceration of the womb is neither a general cause of uterine disease, nor a trustworthy index of its progress; and it follows, I think, as a necessary corollary, that the endeavour by local remedies to remove this condition of the os is not the all-important object in the treatment of uterine disease, which the teaching and the practice of some physicians would lead us to imagine."

It seems to us that, as usual, when statistics are called in aid of medicine, great confusion lurks under an appearance of precision. There is no distinction made between the various degrees of ulceration of the neck of the womb, which is spoken of as one and the, same pathological entity, and this absence of indispensable distinctions vitiates alike both Dr. West's statistics and his conclusions. That *slight* morbid lesions, such as erosions and superficial ulcerations of the neck of the womb are generally of little moment, are of frequent occurrence, and are cured by nature alone, or aided by rest and constitutional measures, we agree with Dr. West; but should he pretend that *severe* lesions, deep or extensive ulcerations of the neck of the womb, do not produce most distressing, varied, and pertinaceous symptoms,—symptoms ineffectually relieved by the best-directed constitutional measures, yielding, on the contrary, either to local treatment adopted alone, or to surgical treatment combined with constitutional measures, then we can only express our surprise, and leave the ultimate decision of this important question to the experience of future observers. Many pages are devoted to the consideration of the importance of uterine lesions, and the argument is conducted in a manner suggestive of comment. Struck by the fact that of late uterine polemics have degenerated into scurrilities, Dr. West has thought it advisable to differ in opinion with no individual authors, but he is strongly opposed to "some authors," to "some writers," &c. Does Dr. West allude to Dr. E. Kennedy, or Dr. F. Churchill, or to Mr. Whitehead, Dr. Murphy, Dr. Tilt, or Dr. Oldham? None of these gentlemen are called in

question, but simply Dr. H. Bennet, whose book he has constantly in view, whose views he attacks, and whose statistics he even quotes, without once mentioning his name, except in a foot-note. Dr. West knows full well that, while all the distinguished practitioners, whose names we have cited, believe in the fatal effects of severe ulceration of the neck of the womb, none would be willing completely to adopt Dr. Bennet's opinion, nor his loosely expressed estimation of the frequency of uterine disease.

After perusing many pages, wherein the influence of uterine lesions in raking up constitutional diseases is sometimes admitted, as at page 114, and afterwards denied; after finding nitrate of silver objected to as being too weak an application, and potassa fusa c. calce, because it was too strong, we were agreeably surprised, on coming to the treatment, to find pages that might have been written by Dr. Bennet or Dr. Tilt, so judicious and numerous are the local modes of treatment recommended for the cure of uterine ulcerations. Thus does Dr. West's previous skirmishing not interfere with his practice; and, although, at page 126, the supposed perpetuation of uterine disease by local treatment is forcibly insisted on, he, nevertheless, recommends many plans of surgical treatment, with an inconsistency we willingly pardon. In like manner, at page 128, Dr. West is eloquent on the disadvantages of potassa fusa c. calce, but, when descending from the cloudy regions of discussion, he comes to treatment, he admits that strong caustics are sometimes required and gives the preference to the acid nitrate of mercury.

It is so satisfactory to find authorities agreeing upon important practical points, that we willingly pass over this discrepancy between Dr. West's theory and his practice; but as he finds it sometimes necessary to cauterize ulcerations with the acid nitrate of mercury, it would have been well had he said something about the application of potassa fusa c. calce to deep and chronic ulcerations of the neck of the womb, for at page 129, he has merely spoken of it as a tissue destroyer in chronic uterine induration. For the speedy cure of these lesions we know of no better application than its superficial cauterization with the potassa fusa c. calce. Has Dr. West tried it? and, if so, in how many cases, and with what results? A little statistical information on so important a point would not have been amiss. With regard to the treatment of uterine disease, Dr. West's observations, although judicious, present no novelty.

The chapters on displacements of the womb are, perhaps, the best in the book. Dr. West shows himself well acquainted with what has been written on the subject by German and French, as well as by our own authors, and his materials are lucidly arranged. He is a decided opponent of Dr. Simpson's views on this point, and completely adopts the views long ago advocated by Dr. H. Bennet and Dr. Tilt, that deviations are, of themselves, harmless, though they forcibly attract attention on account of the uterine swelling, ulceration, or neuralgia by which they are accompanied; and with them and many Freuch authorities, Dr. West believes that the principal indication of the treatment of deviations is to treat their complications. At page 122, Dr. West has briefly traced the rise and progress of the stem

pessary, and at page 224, we find the following excellent reasons for neglecting its use.

"1st. The safe employment of the instrument requires that, as a general rule, its use should be continued for only a very few hours at a time; a necessity which implies that every woman who is submitted to this mode of treatment shall undergo two vaginal examinations every day, the one for the introduction of the instrument, and the other for its withdrawal.

"2d. The quietude which its use imposes, and the restrictions to which the patient is compelled to submit in order to avoid severe suffering and the risk of serious danger, are at least as absolute in their kind and as irksome to be borne as those which any other mode of treatment involves, while it is necessary to continue them for as long a time.

"3d. In spite of all precautions, the treatment is generally painful, often dangerous, sometimes fatal; and the untoward accidents have not been by any means constantly attributable to want of prudence either on the part of the practitioner or of his patient.

"4th. Cure, even by the long-continued employment of this means for several months, is uncertain, while relapses are very frequent after the mechanical support is discontinued; besides which the permanent cure of the misplacement is far from being always followed by the cessation of the symptoms."

These conclusions are certainly temperate, if Dr. Tilt be correct in his enumeration of the many fatal cases which are known to have occurred to women in the prime of life, from the use of the stem pessary at home and abroad, which will be found at page 259 of our last volume. This is a question of great importance, and it is deeply to be deplored that Dr. Simpson will not help to bring it to a satisfactory settlement. When the stem pessary was the subject of protracted discussion in the French Academy of Medicine, Dr. Depaul the reporter of the commission stated, that he had written to Dr. Simpson asking him for cases, but that he had only received instruments; and when Dr. Simpson's papers were lately collected, under his supervision, by two of his own pupils and friends, he did not enable them to give the full results of his late as well as of his early experience of the dangers attending the use of the stem-pessary. Dr. Simpson must be aware that the uterine stem-pessary has fallen into disrepute in Germany, has been severely condemned in France, has never received the countenance of the profession in England, and that its value has even been strongly contested in Scotland; his silence, therefore, on the subject, ill becomes the midwifery professor of the Edinburgh University.

We regret that our space will not permit us to quote more largely from Dr. West's work, but we recommend it as one well calculated to give the student an insight into the literature of diseases of women, and we gladly enrol the author amongst the chosen band who are arduously endeavouring to advance our knowledge in such an important branch of medicine.

Records of Obstetric Consultation Practice ; and a Translation of Busch and Moser on Uterine Hemorrhage (with notes and cases.) By EDWARD COPEMAN, M.D., F.R.C.S., Physician to the Norfolk and Norwich Hospital, &c. (London, Churchill, 12mo., 1856, pp. 223.)

Dr. Copeman's object in publishing these 'Records' is to convey a few practical exemplifications of certain subjects, rather than to enter into minute descriptions of them. Puerperal fever, the use of the vectis, the induction of premature labour, puerperal convulsions, and craniotomy, are the subjects occupying the first part; an essay on uterine hemorrhage, translated from Busch and Moser's 'Handbuch der Geburtskunde,' with additional notes and cases, forms the subject of the second part; while a case of placenta prævia and a case of fibrous tumour of the uterus, treated successfully, are added in an appendix. Such are the important subjects upon which Dr. Copeman has written in a manner which cannot fail to convey much sound information to all engaged in the arduous duties of obstetric practice.

For our own part, we are especially struck with what Dr. Copeman says upon the use of the vectis, and on the induction of premature labour; and it is to these points that we are wishful to direct the attention of our readers.

Of all the instruments employed in midwifery, Dr. Copeman believes the vectis to be the safest and most convenient, as well as the most efficient and the most general in its range of application, being applicable, not only to cases in which the short forceps are available, but also to such as would require the long forceps, and even to some in which no forceps could be used; and this belief is supported by the cases which are given.

"The instrument I have been in the habit of using," says Dr. Copeman, "and which I strongly recommend as being adapted to almost every variety of case requiring its employment, is 4½ inches long in the handle, and 8½ inches in the blade when straight; but the distance from the handle to the end of the blade when the proper curve has been made is 7½ inches. The fenestra begins at 4¾ inches from the handle, and there the blade is flattened, and 1¼ inch wide. The fenestra is ¼ of an inch wide at its commencement, 1¼ inch across its middle, and a little wider than this nearer the end of the instrument, the widest part of the instrument being 2⅛ inches, and that being about an inch from the end. The flattened iron border surrounding the fenestra is seven sixteenths of an inch. The shaft of the instrument is round to the distance of 2¼ inches from the handle, and is then gradually beveled off to the commencement of the fenestra, where the iron is about three sixteenths of an inch thick at the inner border, and a little less at its outer margin, both being carefully rounded off. The round part of the shaft is rather more than an inch in circumference.

"The advantage of the peculiar curve of this instrument is, that it is sufficient to make it a very effectual and powerful *hook*, and yet it is of a shape that will *fit* almost any part of the child's head; by which I mean that it can be kept in close contact with the head on whatever

part it may be thought necessary to apply it; whereas if it were a straighter instrument, it would either slip off the head, or must be used as a *lever* instead of a hook, which I think extremely objectionable; and if the curve were greater or more circular, it would be impossible to get so much of the instrument in close contact with the head: it would not have so much *bearing* upon the head, but would press upon it unequally, and require, therefore, more actual tractile force to obtain the same influence upon the head itself; because, of course, the greater the extent to which the blade is closely applied to the head, the greater mechanical power it will have to move it, and the less danger there will be of the force applied acting injuriously upon any one individual portion of the child's head. Its peculiar length also gives it advantages over many that I have seen, in not being too great to admit of the handle being a fixture: if the handle goes to screw on, it may be rather more convenient for the pocket, but more preparation is required to use it; and should it happen that the handle is by accident left at home (which I have known the case) the instrument might as well have been left too; and if, as in many I have seen, the handle has a hinge and button, it does not possess the necessary degree of firmness for satisfactory manipulation; for any movement or sound produced by the handle interferes with the delicacy of the sense of touch, and might confuse the operator. The instrument I have described is long enough and firm enough for every purpose for which it can be required, and yet not too long to be easy of application. Another advantage it possesses is the width of the blade, both as regards the whole instrument and also the flat margin around the fenestra; in both respects it is wider than usual, and therefore has a bearing over a larger extent of the child's head, making it less likely to press injuriously upon any particular point. I need scarcely observe that it should be well tempered, so as not to *give*, or alter its curve, during traction.

"In almost every notice of the vectis I have been able to find in books, it has met with no small share of abuse, not so much for any positive harm it has done as for being an inefficient and useless instrument; but the reason for this I have discovered to be, that those who have described it not having understood fully how to employ it, and have based their objections upon false views of its mechanical power and mode of operation. For instance, Baudelocque has written a long article upon the subject in depreciation of the instrument, and describes the manner of using it in a way that proves him to have been entirely ignorant of the principles which ought to guide its employment, of the nature of the mechanical power it ought to be made to exercise, and of the cases for which such an instrument as I describe is appropriate. It has been almost universally described as a lever of the first order, the child's head being the weight, the mother's pelvis, especially the arch of the pubes, the fulcrum, and the surgeon's hand the power; a mode of using it which I do not hesitate to say is far from safe, and which in but very few cases would, even if safe, be found successful. The mechanical power of the vectis I use, is that of a hook, so to speak,—that is to say, the blade should be passed so much over the head as to lie principally *behind* the part on which it is destined to act,

and the principal moving power is that of *traction:* it is true, however, that simple traction might sometimes, perhaps often, cause some displacement of the instrument; and therefore something additional is required to keep it in its place, and this is a kind of pressure on the handle which keeps the blade in close proximity with the head, without making any part of the mother a fulcrum; a pressure, in fact, with the hand such as would be used were we attempting to bend the handle backwards upon the shaft or shank of the instrument, and a gradual elevation of the handle as the head descends in the pelvis. In fact, it ought to be used in much the same manner as the surgeon would employ his hand for the same purpose were there room to introduce it.

"By such a management of the vectis, the soft parts of the mother have to bear scarcely any more pressure than they must necessarily undergo during the passage of the child's head; the only difference being the thickness of the blade lying in close contact with the scalp; and this slight addition to the size of what has to pass through the pelvis is very amply compensated for by the much shorter time the parts have to suffer the pressure upon them. The child's head has, however, to bear the pressure of the instrument, and is not unfrequently a little marked by it; but this ought never to occur to any serious extent, and I have frequently seen the head more injured by the forceps than I have by the vectis. The occurrence of ruptured perinæum during the employment of the vectis is very rare indeed, and the reason is sufficiently obvious; for whatever dilating influence the vectis exercises upon the perineum is made *indirectly* through the medium of the globular head of the child, which is the *natural* mode of dilating it; whereas by using Assalini's forceps, the perineum is often put very much upon the stretch by the handles of the instrument, before it is touched by the head; and this pressure being exerted on two points only of its circumference, it is placed in circumstances the most favorable to rupture, and accordingly it is sometimes thus lacerated. The most essential pre-requisite in using the vectis (and the same may be said of every other instrument employed in midwifery) is a thorough knowledge of the position of the child's head, and of the direction to be given to it in order to facilitate in the greatest degree its expulsion or passage through the pelvis: there is no certain or invariable rule as to what part of the head it should be fixed upon; sometimes it should be the occiput, sometimes the brow, or the mastoid process, or the chin; and this is to be determined by the knowledge of the accoucheur as to the particular direction in which the head will most easily pass. It cannot be too strongly urged upon those who may be called upon to operate in midwifery, to make themselves thoroughly acquainted with the presentations of the head, and so to educate their sense of touch as to be able to determine, with as much certainty as possible, the points with which the finger during examination comes in contact, as well as the exact position in which the head in each case is placed. This, indeed, should be accurately made out in *every* case, whether natural or otherwise, for by constant practice it becomes easy; whereas if common cases are neglected because they are natural and will do well of themselves, and no precise-

ness of examination is attempted except where obstructions occur, it will be found exceedingly difficult to command, at once, a sufficient degree of tactile discrimination to ascertain with certainty what it will then be so desirable to know. I believe many of the failures attendant upon the use of the vectis arise from want of this precise knowledge of the position of the impacted head; and without it I feel sure no one can become an adept in the use of the instrument."

When speaking of the induction of premature labour, Dr. Copeman introduces the cases of two patients, in whom uterine contraction was induced by a method not usually adopted, but which appears to have several points to recommend it. This method arose out of the difficulty experienced, in the first case, in attempts to rupture the membranes. In this case the uterus was so high, that it was difficult to direct an instrument into it by the finger; and when the tube was passed in, it could not be made to rupture the membranes. The issue, however, proved that this was not necessary, and afterwards it was not attempted; for if the passing an œsophagus bougie or tube a distance into the uterus, between its inner wall and the chorion, will so disturb pregnancy as to induce labour, there is a very manifest advantage both to the child and the mother in resorting to this plan in preference to that of rupturing the membranes.

Case I.—"March 5th, 1851.—Mrs. B—, æt. 36 years. The patient, it is estimated, is gone seven months and a week in her fifth pregnancy, and in consequence of her last three labours having proved destructive to the children from want of pelvic space, and the first, although a small child, requiring the use of the forceps, I met my friend Mr. — for the purpose of inducing premature labour. We found the external parts relaxed but very tender, and the pelvic arch too small to admit of the introduction of the hand. The os uteri was too high up to be reached satisfactorily by the finger; I could, however, just reach it with my middle finger, and introduce through it a flexible metallic bougie some way into the uterus, but without rupturing the membranes; so that it probably passed between them and the uterus, and it gave no pain in its introduction. We then agreed to wait awhile for the result of this proceeding, prescribing castor oil, rest, and warm fomentations to the external parts.

"6th.—Our proceedings yesterday were followed by no result, and to-day, with the aid of a speculum, I introduced a stomach pump tube easily several inches into the uterus, but could not rupture the membranes; it must, however, have separated them considerably from one side at least of the uterus, and we thought this might be sufficient to induce uterine contraction.

"March 10th.—She had had a little pain at times each day since the 6th; but early this morning labour pains set in in good earnest. At about 2 p.m. Mr. — saw her, and found the os uteri dilating; at six he was again summoned, and found the os quite dilated, the liq. amnii escaping at intervals as if the membranes were ruptured high up; the pains were very severe and frequent, and the head was pressing upon the brim of the pelvis. Finding no progress made in three hours with severe and forcing pains, he administered small quantities of chloroform, and sent for me at nine o'clock in the evening. The os uteri and other soft parts were in a favorable state for delivery; but the head was very high up, and covered by the membranes, which I ruptured, giving rise to a small escape of liq. amnii. With some difficulty I applied the vectis, by means of which I assisted the head into the pelvis, and, in about an

hour, brought a living male child into the world, the labour having been very severe and difficult, owing to the small size of the pelvis. The child did not appear very active, and its forehead was marked by the vectis; but we congratulated ourselves in not having delayed inducing labour until a later period of pregnancy; for we felt that even another week's growth might have rendered it impossible to have saved the child.

"On the 6th of January, 1853, Mrs. B— being again pregnant, I accompanied Mr. — for the purpose of again bringing on premature delivery, and pursued the same plan as before; that is to say, we introduced the round end of a stomach-pump tube seven or eight inches into the uterus, separating the membranes from the uterus to that extent without rupturing them. A few drops of bloody fluid escaped, but the introduction of the tube gave no pain. The vagina, as before, was extremely sensitive and painful under the use of the speculum, and the os uteri too much out of reach for convenient manipulation. Up to the 9th, no symptoms of labour had occurred, with the exception of there having passed on that day a little coloured discharge; and at Mr. —'s request, I then introduced the tube again, and moved it about freely in the uterus, without occasioning pain.

"15th.—No pain having yet occurred, the tube was again introduced to-day.

"16th.—Still no symptoms of labour. A firmer tube, bent near its middle, was introduced to-day, and turned round in the uterus so as to describe a circle three inches in diameter.

"28th.—Labour not yet brought on, but she thinks she has some symptoms of its approach to-day. Tried to introduce the tube again to-day, but could not do so freely, owing, I believe, to its impinging upon some portion of the child; we therefore injected some warm water through it, hoping by this means to separate the membranes from the uterus to a greater extent.

"February 20th.—The patient had some uterine pain and slight indications of the approach of labour for a day or two after last report, but they went off again; and as the parts had become exceedingly tender, and there was reason to fear we might excite inflammation of the uterus, we thought it right not to renew our efforts to induce labour at present.

"March 6th.—Summoned by Mr. — at two o'clock this mourning. The patient had been in strong labour since nine the previous evening, and the head was still high up, having scarcely entered the pelvis. The membranes had not ruptured, but the uterus was fully dilated, and the soft parts were in a favorable state for delivery. The head presented with the anterior fontanelle towards the left ramus of the pubes. I passed the vectis over the occiput so as to get a purchase upon it by engaging it in the fenestra, and, by a little perseverance, turned the occiput towards the right ramus of the pubes, the head not being yet wedged into the pelvis. I then got the blade of the vectis over the child's right lower jaw near its angle, and, within an hour, succeeded in bringing into the world a small, living, uninjured boy. The labour was very painful, and the patient distressingly vociferous, notwithstanding the frequent administration of small quantities of chloroform. The placenta came away naturally, and we left her in a good state.

"Both mother and child lived.

"In this case, although we did not succeed in inducing labour at the time we desired, it appeared that our interference did in some way retard the growth of the child, which at the time of its birth was very much smaller than usual at the same period of pregnancy.

Case 2.—"June 17th, 1854.—Mrs. —, æt. 29 years, having lost her three previous children, owing to want of pelvic space, was recommended to submit

to the induction of premature labour in this her next pregnancy. She is now seven months gone, and at the request of my friend, Mr. —, I to-day introduced an œsophagus bougie into the uterus, and passed it up nearly its whole length without rupturing the membranes.

"18th.—Tube introduced again to-day.

"19th.—I again introduced the tube, and advised waiting a few days to see the effect of what had been done. The introduction of the tube hitherto had neither given pain nor ruptured the membranes; but, to-day, I observed a nervous irritable condition of the patient, which led me to think uterine action would ere long ensue. Towards night she became uneasy; the following day she had slight pains, and at nine o'clock in the evening of the 21st the waters broke, and at 11·30 a living female child was born, without other assistance than what the midwife could afford.

"She was doing well the next day, and had a very good recovery.

"July, 1855.—This patient being now again in the seventh month of pregnancy, Mr. — resorted to the same means of inducing labour. He introduced an œsophagus-tube on two successive days, and then once again after one day's interval. Labour commenced a few hours after this third introduction; and, to the great delight of the mother, another living child was born after a natural though somewhat painful labour."

Cases of Rupture of the Womb, with remarks. By James D. Trask, A.M., M.D. of New York. ('American Journal of Medical Sciences,' January, 1848; April, 1848; and July, 1856.)

In these papers Dr. Trask presents us with a careful and laborious analysis of no less than four hundred and seventeen cases of rupture of the womb, and with a lengthened summary, and of this analysis and summary we propose to give the principal results.

Causes of rupture.—A *diseased condition* of the womb is frequently met with in this accident. The condition of the womb is reported only in 67 cases out of the 417 cases. In 13 of these only is it reported healthy; in 20, softened; in 21, thinned; in 1, both thinned and softened; in 3, both thinned and thickened; in 8, "diseased;" in 1, thin and brittle.

As *conditions obstructing the progress of the child*, and in that way leading to rupture, we have in these 417 cases, *at least*—

74	cases of	contracted pelvis.
12	„	hydrocephalic fœtus.
6	„	rigidity of the os.
6	„	bands in the vagina.
1	case of	enlarged ovary.
99		

The proportion of each of these complications, compared with the whole number of cases, must be regarded as relatively very large, especially in the instance of contracted pelvis. We see that in at least one fourth of the whole number of cases there is a disproportion between the head and the pelvis, or an obstruction from organised adhesions of the vagina. This estimate is exclusive of cases in which

the head is noted as large and firmly ossified. We cannot, therefore, err in regarding this relation as one of cause and effect. That such obstructions existed in many cases in which it is not alluded to in the histories given, is rendered probable by considering the duration of labour previous to rupture.

Time from beginning of labour to rupture.—Taking the whole of our cases in which this is specified, we find that rupture occurred in—

6	hours	and less	from the beginning of labour		in 38	cases.
12	„	and over six	„	„	36	„
18	„	and over twelve	„	„	10	„
24	„	and over eighteen	„	„	20	„
36	„	and less	„	„	16	„
48	„	and less	„	„	14	„
Three days and less			„	„	11	„
Four days and less			„	„	2	„

Comparing these with the *duration* of labour in the 15,850 cases reported by Dr. Collins, we find that 13,412, or eighty per cent., terminated within six hours; 1672, or sixteen per cent., in from six to twelve hours; and that in corresponding periods of six hours beyond this, they were but from one to two per cent.

The table above embraces 34 cases of contracted pelvis, but, after deducting these, the relative periods remain but little changed. It will be seen that the duration of labour previous to rupture is very much greater on the average than the entire duration of ordinary labours, according to Dr. Collins. The obstacle to delivery presented by the disproportion between the head and the pelvis, &c., explains this fact; and the probability that such hinderances to the progress of the child existed in many of our imperfectly reported cases, in which it is not noted, is strengthened by a consideration of the protracted character of the labours as a whole. But while the protracted character of the labour, under a continued succession of unavailing efforts to drive the head of the child through the pelvis, explains the frequent coexistence of such disproportion and rupture, there are not a few instances in which the duration of the labour was so short, or the character of the labour so little severe, that we cannot so readily trace any necessary connection between these and the relative size of the head and pelvis. In not a few instances, the first labour-pain was that causing the rupture.

Inordinate voluntary exertion deserves to be enumerated among the causes of rupture. It is prudent to persuade the patient to abstain from voluntary efforts, provided there be resistance to the progress of the child from any cause. We believe that no case of rupture has yet been published in which chloroform was used, which may be due to the fact, that voluntary effort is for the most part suspended under its influence.

Ergot had been given in five cases only.

Situation of the rupture.—*During pregnancy* four involved the fundus; these, added to thirteen in the fundus and body, before reported, make *seventeen* of the fundus and body, and *eight* involving, more or less, the cervix.

During labour.—Of the entire number of cases, *one hundred and ten* are distinctly spoken of as involving the cervix; seventeen the fundus; and *seventy-one* the body of the womb. Of these seventy-one, by far the larger part are reported as ruptures of the anterior or posterior part, or of the right or left side; and in some of these it is highly probable that the rupture involved the cervix also.

It appears to be a fair inference from these facts, that labours in which ruptures occur are, as a class, protracted; that the lesions of softening and thinning generally precede the rupture, and are, for the most part, a consequence of the delay; but that, in a certain proportion of cases, as in those occurring during pregnancy and early in labour, these lesions must have existed before the expulsive action of the womb was set up; while in certain other cases, rupture appears to occur in the womb unaltered by morbid changes.

We copy the *table* of *ages*, with the additions, from the new cases:

Years.	Patients.	Years.	Patients.	Years.	Patients.
16	2	26	9	37	8
17	1	27	5	38	8
18	1	28	20	39	1
19	1	29	3	40	12
20	5	30	24	42	2
21	3	32	15	43	2
22	1	33	6	44	4
23	1	34	4	47	1
24	5	35	13	40-45	1
25	11	36	17		

The largest number were at the age of 30 years.

The largest number of cases delivered under Dr. Collins's supervision was also at the age of 30 years; viz., 2346 in a total of 16,414 cases.

The table showing the number of the pregnancy in which the rupture occurred:

No. of Pregnancy	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th	9th	10th	11th	12th	13th	Multiparæ.
No. of Patients	31	25	30	27	21	25	14	7	7	12	8	5	2	35

Symptoms of rupture.—The total, in which the character of the previous labour is stated, is 156. Of these—

In 46, or 29·5 per cent., it was very severe.
„ 39, or 25·0 „ „ strong.
„ 46, or 29·5 „ „ moderate.
„ 11, or 7·0 „ „ feeble.
„ 14, or 9·0 „ „ "tedious."

In *fifty-five* the pains ceased suddenly; in *seventeen* they ceased gradually.

From this, it appears that liability to rupture is not confined to cases in which the labour is of great severity, and that it may sometimes happen when the pains from the outset are feeble. Its occurrence in the course of a labour of moderate severity appears to be quite as common as when the pains are very severe. We have also the contrast of extensive rupture and escape of the child with few and feeble pains, and a simple laceration of the muscular coat after labour of great severity.

The sudden cessation of the pains is one of the most characteristic symptoms of the accident; but we learn that this is not of invariable occurrence, and that, in a small proportion of cases, the cessation of pains is gradual.

Again, the *recession of the presenting part* of the child takes place, as a general rule, upon the occurrence of the accident; but the exceptions are of sufficiently frequent occurrence to deserve especial notice. In several cases the head did not recede; and in a few the head remained within reach, and delivery was effected by the forceps or perforation. In a few the head receded when it was attempted to apply the forceps. In twenty-two the rupture was accompanied by a peculiar *sensation*. In four the rupture was audible to the bystanders. In two there was no sudden acute pain or tearing sensation, and in one the pains continued to recur after the uterus was empty and contracted. The early appearance of extreme depression after rupture was not seen in three cases. While the cessation of the pains, the sudden outcry of the patient, and the recession of the child, followed by symptoms of great prostration, in general render the diagnosis of the accident easy, the absence of any one of these is, as we have seen, not incompatible with the existence of rupture, and the knowledge that such exceptions occasionally exist may, in some cases, aid in the diagnosis.

Influence of delivery on mortality.—Total of all cases delivered, 207. Of these, 77 recovered, or 37 per cent.

Total of all cases undelivered, 115. Of these, 27 recovered, or 23·5 per cent.

But among the cases previously reported, were many in which the fœtus having escaped into the abdomen, was subsequently discharged after decomposition, and were reported as remarkable cases of recovery. Among the cases now related, of 26 undelivered, only 3 recovered, or about 11 per cent.

These results, however, are to be regarded only as approximating the relative proportion of cases saved and lost in actual practice; since we would naturally expect to find the larger proportion of cases published to have been cases of recovery.

But, if our statistics did not clearly exhibit a diminished mortality among those delivered, they show that life is prolonged by this measure, even in cases that do not recover.

We formerly showed that the average duration of life, after rupture, with those *delivered*, was *twenty-two* hours; and that of the *undelivered* but *nine* hours. By adding to those the new cases, we

find that, of those *delivered*, *fifty-four* per cent. survived beyond *twenty-four hours;* while of those dying *undelivered*, *twenty-seven* per cent. survived beyond the same period.

RELATIVE SUCCESS OF DIFFERENT MODES OF TREATMENT WHEN THE HEAD AND THE WHOLE OR PART OF THE BODY HAS ESCAPED INTO THE PERITONEAL CAVITY.

Summary of all the cases.

Gastrotomy	saved	16,	lost	4, or 20·0	per cent.	lost.
Turning, &c.	„	23,	„	50, or 68·5	„	„
Abandoned	„	15,	„	44, or 75·0	„	„

RELATIVE SUCCESS OF DIFFERENT MODES OF TREATMENT WHEN THE PELVIS IS CONTRACTED.

Summary of all the cases.

Gastrotomy	saved	6,	lost	3, or 33·0	per cent.	lost.
Perforation, &c.	„	15,	„	30, or 65·0	„	„
Abandoned	„	0,	„	11, or 100·0	„	„

Adding together these two classes, we get, as the comparative results of the different modes of treatment—

Gastrotomy . .	saved	22,	lost	7, or 24	per cent.	lost.
Turning, perforation, &c.	„	38,	„	80, or 68	„	„
Abandoned . . .	„	15,	„	55, or 78	„	„

RESULT AS EFFECTED BY FACILITY OR DIFFICULTY IN DELIVERY.—Taking all the cases together in which this circumstance is alluded to, in *seventy* cases of *recovery*, *forty-eight* were delivered with ease, or 68·5 per cent. In *ninety-one* cases resulting in *death*, delivery was accomplished with ease in but *thirty-eight*, or 41·7 per cent.

We have included under *easy* deliveries those in which gastrotomy was performed; the term *easy* having reference to time occupied, as well as facility of execution. In all the cases of gastrotomy in which allusion is made to the point, delivery was accomplished very rapidly, and with comparatively little suffering.

If we deduct from each class just enumerated the cases of gastrotomy, we still find a preponderance of easy deliveries among recoveries, and of difficult deliveries among those who were lost. Thus, among *recoveries*, we get *twenty-six easy*, and *twenty-two difficult*, or 54 per cent. delivered with ease; and, among the deaths, *thirty-one easy*, and *fifty-three difficult*, or 37 per cent. delivered with ease. About gastrotomy, Dr. Trask says, "The relative success of gastrotomy is, as we have seen, greater than that of any other mode of delivery, and we believe that a more frequent resort to it would result in a diminished mortality to the accident. In short, *as a general rule, from whatever cause we might be led to anticipate a protracted and difficult delivery by the natural passages, gastrotomy will afford the best chance of recovery.* The only exception we would make is, when there is impaction of the head in the pelvic cavity or in the inferior strait."

There is a total of twenty-four cases of *hernia of the intestine* through the rent in the womb, and in one case death was attributed to strangulation of the bowel in the opening. In several cases there was injudicious interference or unjustifiable violence.

Vesico-vaginal Fistula cured in fourteen days by a new method of operating By Mr. J. Baker Brown, Obstetric Surgeon to St. Mary's Hospital, &c. ('Lancet,' November 15th, 1856.)

The method adopted by Mr. Brown in the following case was devised by Dr. Bozeneau, of Alabama, in America. It is very ingenious, and we quite agree with Mr. Brown in thinking that it will be found to answer in many cases which have hitherto proved intractable to treatment.

Case.—Deborah P—, æt. 22, was admitted into St. Mary's Hospital, under his care, September 22d, 1856. She stated that she was delivered of a still-born male child on the 15th of July, by instruments, after being forty-eight hours in labour. She was shortly afterwards seized with an attack of fever. Eight days after delivery she discovered that the urine dribbled away, after which it all seemed "to pass by the wrong passage." On examination per vaginam, he discovered a fistulous opening close up to the os uteri, about the size of an ordinary director, which instrument could readily be passed within the bladder, through the opening into the vagina. It appeared that all the urine passed through this opening, and none through the urethra; in fact, that she was never able to retain any within the bladder, even for a short time. The health of the patient being carefully attended to, especially the removal of some long worms from the bowels, he (Mr. Brown) determined, after consultation with some of his colleagues, to operate, after a method devised by Dr. Bozeneau, of Alabama, in America. Accordingly, on the 15th of October, the patient being placed under chloroform, and put in the position for lithotomy, a leg being held by each assistant; a firm retractor, being placed within the vagina, was held firmly backwards and downwards by a third assistant; and, each side of the vagina being held back by two other retractors, the bladder was seized, just at the juncture of its neck with the body, by a strong pair of Vulsellum forceps, and held firmly upwards and forwards by the right hand of the assistant holding the left leg. The fistulous opening was then with great difficulty brought into view, and the mucous membrane divided, by a sharp knife, completely around the opening, about the eighth of an inch in depth. Three silver-wire sutures, eighteen inches long, were then passed by a needle held by the porte-aiguille, and which are shown in fig. 1. The two ends of each wire were then brought together by an instrument, as represented in fig. 2, thus leaving the parts in apposition (fig. 3). A silver button, described in fig. 4, was then carefully passed over the end of each double suture, and a perforated shot passed over each wire, as shown in fig. 5, and pressed down upon the button, and then firmly pressed by a pair of long strong forceps. The wires were then cut off close to the shot, leaving

Fig. 3

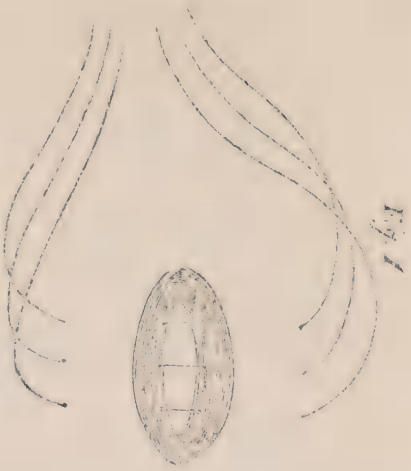
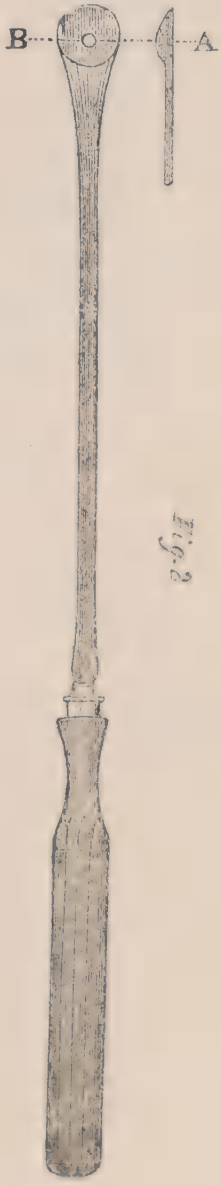


Fig. 1

B

A

Fig. 4



B A

Fig. 2

Fig. 5

Fig. 6

the parts as represented in fig. 6. A piece of lint, dipped in sweet oil, was then introduced within the vagina, the patient placed in bed on a water cushion, on her side, and a bent catheter, with a bag attached to it, was inserted within the bladder, and allowed to remain there. Two grains of opium were given directly, and one grain every four hours afterwards for the first twenty-four hour, and afterwards one grain every six hours ; and a generous diet, with wine, allowed daily. The lint was removed on the second day, and the vagina washed out night and morning with tepid water. All the urine passed freely through the catheter.

On the 24th he carefully removed the button and the sutures, and found the most perfect union had taken place throughout the whole extent.

On the 26th the bowels were relieved, for the first time, by castor oil and enema, and the catheter was removed for three hours, at the end of which time she passed urine comfortably, with no escape per vaginam.

On the 27th the catheter was removed entirely, and she was allowed to sit up and walk about a little.

On the 28th she was up and about all day ; she was able to retain the urine for four hours, and to pass it well.

On the 30th he made a most careful examination, and found the parts firmly united, and without the slightest escape of urine, even after a long and tedious investigation.

Mr. Brown observed that this method of operation had convinced him that cases hitherto intractable to treatment would be found to be curable by this operation.

IV.

REPORT ON PSYCHOLOGICAL MEDICINE.*

BY

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§ I.—*Bibliography.*

I. *Elements of Psychological Medicine, being an introduction to the Practical Study of Insanity.* By Daniel Noble, M.D. 2d Edition. Churchill, 1855.

II. *Medical Testimony and Evidence in cases of Lunacy (the Croonian Lectures,* 1853); *with an Essay on the Conditions of Mental Soundness.* By Thomas Mayo, M D., F.R.S. J. W. Parker and Son, 1854. Also a Supplement to these Lectures, by the Author, 1856.

III. *Lettsomian Lectures on Insanity.* By Forbes Winslow, M.D., D.C.D. Churchill, 1854. (Noticed fully in the Report on Practical Medicine, 'Half-Yearly Abstract,' January to July, 1856.)

IV. *Unsoundness of Mind in relation to Criminal Acts* (Sugden Prize Essay). By John Charles Bucknill, M.D. Highley, 1854.

V. *The Progressive Changes in the Moral Management of the Insane.* By D. H. Tuke, M.D. (Prize Essay of the Society for Improving the Condition of the Insane). Churchill, 1854.

VI. *On the Construction, Organization, and General Arrangements of Hospitals for the Insane.* By Thomas Kirkbride, M.D., Physician to the Pennsylvanic Hospital for the Insane, Philadelphia, 1854.

VII. *Unsoundness of Mind in its Medical and Legal Considerations.* By J. W. Hume Williams, M.D. Churchill, 1856.

VIII. *Criminal Responsibility of the Insane, founded on the Trials of James Hill and William Dove.* By Caleb Williams, M.D. Churchill, 1856.

IX. *The Treatment of the Insane without Mechanical Restraints.* By John Conolly, M.D., D.C.L. Smith, Elder, & Co., 1856.

* The remainder of this Report, which is unfortunately deferred in consequence of the illness of the writer, will be given in the next volume.

X. *Ninth and Tenth Annual Reports of the Commissioners in Lunacy to the Lord Chancellor.* (Ordered by the House of Commons to be printed.) 1855-6.

XI. *Seventh Report on the District Criminal and Private Lunatic Asylums in Ireland*, 1855. (Presented to both Houses of Parliament by Command of Her Majesty.

XII. *Insanity, and Hospitals for the Insane; a Review.* Reprinted from the Dublin Quarterly Journal of Medical Science, Nov., 1855.

XIII. *Cases Illustrating the Pathology of Mania and Dementia.* By Alexander John Sutherland, m.d. Reprinted from vol. xxxviii of the Medico-Chirurgical Transactions.

XIV. *William Tuke, the Founder of "the Retreat."* From the Journal of Psychological Medicine, Oct., 1855.

XV. *Criminal Lunatics, are they Responsible?* A Letter to the Lord Chancellor. By J. Russel Reynolds, m.d. Churchill, 1856.

XVI. *An Address to the Trustees and Governors of the Warneford Lunatic Asylum.* By William Ley, Esq., Medical Superintendent of the Oxford County Asylum. Oxford, 1856.

XVII. *Remarks on the Lunacy Laws of Scotland and France.* By John Webster, m.d. Reprinted from the Psychological Journal, 1856.

XVIII. *Du Suicide et de la Folie Suicidale.* Par A. Brierre de Boismont, Paris, Balliere.

XIX. *The Journal of Psychological Medicine and Mental Pathology.* Edited by Forbes Winslow, m.d., d.c.l. Quarterly.

XX. *The Asylum Journal of Mental Science.* Published by authority of the Association of Medical Officers of Asylums and Hospitals for the Insane. Edited by John Charles Bucknill, m.d. Quarterly.

XXI. *The American Journal of Insanity.* Edited by the Medical Officers of the New York State Asylum. Quarterly.

XXII. *Allgemeine Zeitschrift für Psychiatrie.* Unter der Redection von Damerow, Flemming, und Roker. Quarterly.

XXIII. *Correspondenz-Blast der Deutschen Gesellschaft für Psychiatrie.* Bi-monthly.

XXIV. *Annales Médico-Psychologiques.* Par MM. Baillanger, Brière de Boismont, and Cerise. Paris. Quarterly.

XXV. *Annual Reports of the following Lunatic Asylums: Devon, Oxford, Wilts, Bethlehem Hospital, Colney Hatch, and Hanwell; Dundee, Belfast, Perth, Essex, Clonmel, Kent, Suffolk, Hants, State Asylum Philadelphia, Salop and Montgomery, Surrey, R. Crichton's Institution, Aberdeen.*

§ II.—*The Present Condition of the Insane (Official Reports on).*

I. England and Wales.

The ninth and tenth Annual Reports of the Commissioners in Lunacy to the Lord Chancellor (31st March, 1855, and 31st March, 1856), contain much valuable information on the condition of the insane in England and Wales.

1. *New County Asylums.*—In the Report for 1855, the following interesting notice of no less than six new county asylums occurs.

"The six new county asylums, mentioned in our last report as having been recently opened, have, since their opening, been several times visited by the commissioners, and it may be well here to give a short statement of their progress, and present condition.

"The asylum for the county of Warwick was opened for the reception of patients in the month of June, 1852, and was first visited in the month of December, in the same year. At that time, the asylum contained only 125 patients, and seven entire wards were unoccupied and unfurnished. At the next visit, in October, 1853, six wards were unoccupied, and at the last visit there still remained a large available space for the reception of patients, although some pauper patients belonging to the county of Gloucester had been received under a temporary contract.

"The reports as to the condition of this institution are of a favorable character. Instrumental restraint is never used, and seclusion appears to be rarely resorted to. A considerable number of patients of both sexes are employed, and a large proportion attend divine service on Sundays. The food is stated to be good, and the bedding and clothing comfortable. The ventilation, however, appears to be defective, and the visiting commissioners notice with regret the absence of open fireplaces in the galleries.

"Considerable progress has been made in bringing the land into cultivation, and in re-laying many of the drains, the original construction of which appears to have been very bad.

"The Worcester County Asylum was opened in the month of August, 1852. It has been three times visited by the commissioners, and at the date of the last visit, in September, 1854, contained 215 patients, being eleven more than the asylum was originally calculated to accommodate.

"In this asylum the use of mechanical restraint, although not absolutely prohibited, is exceedingly rare, and only one instance is recorded since the opening. The patients have been generally healthy, and no disease of an epidemic character has prevailed.

"The asylum, although in most respects well conducted and in good order, is reported to be still deficient in appropriate furniture, and the stock of books, periodicals, and means of in-door amusement is

insufficient. A better supply of clothing for the patients also appears to be required.

"The supply of water has been found to be quite insufficient for the wants of the asylum, but steps are about to be taken at once to remedy this defect.

"The building appears to be well adapted for its purpose. The wards are cheerful, spacious, and well ventilated. The various offices also are convenient. The justices propose shortly to erect a chapel, detached from the main building, and plans have already been approved by the secretary of state for the erection of new wards capable of accommodating eighty-two additional patients.

"The ground surrounding the asylum, although as yet in an unfinished state, is all that could be desired as regards situation and aspect; and although only a short distance from Worcester, the neighbourhood is so retired, that the patients can at all times be taken out for exercise beyond the boundaries of the institution without inconvenience.

"The Lincoln County Asylum, which was opened in the month of August, 1852, contained, at the date of the commissioners' last visit in November, 1854, 246 patients, being within one of the number which the building was constructed to accommodate.

"It is probable that the building will, without crowding or inconvenience, contain more than 250 patients; but should this number be greatly exceeded, it is to be feared that the provision made for the pauper lunatics of the county will be found to be insufficient, and that some addition will become necessary.

"The total number of patients admitted up to the 1st of January, 1854, has been 383; within the same period 115 were discharged, of whom about half were recovered, and sixty-two patients have died. No disease of an epidemic character has prevailed.

"The condition of the patients, and the general management of the asylum, are reported by the visiting commissioners to be very satisfactory. The wards are clean and well ventilated, and the clothing and bedding of excellent quality. The dietary appears to be liberal.

"The whole of the land has been brought under cultivation, and as many as eighty of the male patients find regular occupation upon it.

"Nearly all the females are employed, and the average attendance at the chapel is 150.

"Instrumental restraint is never resorted to, and the instances of seclusion appear to be rare, and of short duration.

"The asylum occupies an elevated site at Bracebridge, in the neighbourhood of Lincoln. Its principal galleries, day-rooms, and dormitories, have a southern aspect, and are cheerful and airy. The various offices are convenient and spacious.

"The amount of water afforded by the wells having been found to be insufficient, a contract was entered into with the Lincoln Waterworks Company, by whom an ample supply is now furnished.

"The Asylum for the County of Hants was opened in the month of December, 1852. It was built to accommodate 400, but has at no time contained quite 300 patients. The internal arrangements of the building are convenient. There are 105 acres of land belonging to the institution.

The site is excellent, having a slope to the south. It is well wooded, and bounded on one side by a stream of water.

"The asylum has been visited four times by the commissioners; and at the last visit they report, that considerable progress has been made towards the complete organization of the establishment. They state that the wards are throughout exceedingly clean and well ventilated; that the patients are well clothed and apparently comfortable, and that mechanical restraint is never employed.

"It is greatly to be regretted that so large an amount of excellent accommodation in this asylum, the whole of which is well furnished, and ready for the use of the patients, should remain unoccupied, whilst the numerous pauper lunatics belonging to the boroughs of Portsmouth and Southampton, which are not in union with the county, are sent to licensed houses near London, and are thus removed to a great distance from their friends, at a considerable expense, and sometimes, it is to be feared, to their serious injury.

"The Essex County Asylum is situate at Brentwood, and is surrounded by eighty-six acres of land. The building, the elevation of which is of a very pleasing character, and which is conveniently arranged, is constructed to accommodate 448 patients.

"At the last visit of the commissioners, in June, 1854, the asylum contained 137 male, and 174 female patients, thus leaving a very large amount of space unoccupied.

"The commissioners report that the patients were generally tranquil and orderly, that mechanical restraint had never been employed, and that seclusion, although occasionally resorted to, was very sparingly used; that the galleries and apartments were clean and well ventilated, and that the health of the patients was good. A considerable number of patients of both sexes are regularly employed, and about 220 of them attend divine service in the chapel. The visiting commissioners conclude their report by stating that, considering the short time during which the asylum has been opened, its condition is "creditable and satisfactory."

"The Asylum for the County of Bucks is situate at Stone, about four miles from Aylesbury. It was built for 200 patients, and would probably accommodate more than that number.

"The exterior is plain and unpretending. The wards are convenient and well arranged, and the situation agreeable. There are, however, only 20 acres of land belonging to the institution.

"The asylum has been three times visited by the commissioners, and their reports are favorable. The condition of the establishment is stated to be creditable to the superintendent and those engaged in its management.

"At the date of the last visit, on the 18th December, 1854, there were 169 patients in the asylum. The whole of the wards were found to be clean and well furnished, and presented a cheerful and comfortable appearance; but some of the galleries were cold, and the system of warming and ventilation, although very costly in construction, and extensively adopted, does not appear to answer its intended purpose, or compensate for the absence of open fire-places in many of the rooms.

"The whole of the land is under spade cultivation by the male

patients, and a considerable number of the patients of both sexes are employed in various ways.

"Mechanical restraint has never been used, but seclusion in separate rooms is occasionally resorted to as a means for tranquillizing excited and violent patients.

"A large proportion of the patients walk out frequently beyond the boundaries of the institution.

"The supply of water has been very deficient; but at the date of the last visit pipes were being laid down to a neighbouring well, from which it was hoped an abundant supply would be obtained.

"Owing to the small number of patients, and the large staff of officers, the charge for pauper patients in this asylum is necessarily heavy."

2. *Army and Navy Lunatic Hospitals.*—The following notice of these institutions occurs in this report:

The excellent arrangements and liberal treatment for which Haslar Naval Hospital is distinguished, have been already sufficiently noticed in former reports.

"The Yarmouth Hospital ceased, in May, 1854, to be occupied as a hospital for military lunatics, possession of it having been resumed by the Board of Admiralty for the purposes of a general hospital for the sailors of the Baltic fleet. The improvements, therefore, which we anticipated in our last report as likely to arise from the appointment of Mr. Dartnell, as permanent medical superintendent of the institution, and which were in progress when the hospital ceased to receive lunatics, were only partially carried out. At that time the lunatic patients in Yarmouth Hospital consisted of nineteen officers, sixty-nine soldiers, and five women, for whom it became necessary to provide elsewhere without delay. The secretary at war having requested our opinion as to the best mode of providing for those inmates, we named Grove Hall, Bow, as a well-conducted asylum, and capable of affording proper accommodation for the soldiers and women, and we at the same time named Cotton Hill Lunatic Hospital (an institution under good management, near Stafford) for the officers. The patients were removed to these several establishments accordingly. But we trust that the arrangements thus made are merely of a temporary character, inasmuch as we should be unwilling to abandon the hope that a distinct asylum will be established for insane soldiers, for whom no public provision at present exists, except the very inadequate and unsuitable accommodation appropriated to them at Fort Pitt, Chatham."

"3. *Metropolitan Licensed Houses.*—With respect to the Metropolitan Licensed Houses, a manifest improvement has taken place in them, as compared with their condition at the time when they first came under the jurisdiction of the commissioners. "No case of abuse or malversation of such a nature as to call for public animadversion has come under our cognizance in any of them in the course of the last year. A few of these houses which receive only patients of the wealthier classes continue to maintain a high standard of excellence.

"In regard to licensed houses, however, both in the metropolitan and

provincial districts, which receive pauper patients, and patients of the middle and humbler classes, we are of opinion that (with a few exceptions) they do not keep pace in the march of improvement, by which the county asylums of the first class are distinguished. Many of them are content to remain at a certain point of advancement; and require, indeed, the constant stimulus of official supervision to prevent their relapsing into the unsatisfactory condition from which by great care and vigilance they have been raised."

We take this opportunity of repeating, that the funds by which public asylums 'are raised and supported, and the causes which influence those who have control over them, necessarily give them a great superiority over private establishments; and that we are fully convinced that the lunatic poor of England will never be altogether properly provided for until public asylums for all the pauper lunatics of the country shall have been erected.

4. *Increase of Insanity—its Causes and Extent.*—It appears from the summary contained in Appendix (A) annexed to this report, that the number of paupers under treatment as lunatics on the 1st of January, in the present year, amounted to 7,133 males, and 8,689 females, forming an aggregate of 15,822 patients, and that 13,324 of these were in lunatic asylums; 185 in registered hospitals; and 2,313 in licensed houses. From the same summary, it further appears, that 1,121 of these patients, being persons whose settlements could not be ascertained, were maintained at the expense of their respective counties or boroughs, under the provisions of the 98th section of the statute 16 and 17 Vict., cap. 97, so that the number of pauper lunatics then actually chargeable to unions or parishes as patients in asylums was 14,701.

On comparing these figures with those which are stated in the returns of previous years, under the corresponding heads, it will be found that there has been a large and progressive addition to the total number of paupers under treatment as insane—the increase, during the last eight years, commencing on the 1st of January, 1847, when they amounted to a total of 9,652, being no less than 6,170, or upwards of sixty-four per cent.; and that during the same period the relative proportions of those placed in asylums, registered hospitals, and licensed houses respectively have greatly altered; in particular, that since the 1st of January, 1847, when the total number of pauper patients in asylums was 5,247, the number of such patients has greatly more than doubled, while the number of paupers in registered hospitals has fallen from 384 to 185, and in licensed houses from 3,996 to 2,313.

The large addition which, as shown by these tables, has been of late years made to the total number of pauper lunatics under treatment, may seem at first sight startling, and has led some observers to infer that insanity as a disease has been increasing in this kingdom in a greatly more rapid ratio than its population.

The facts, however, so far as we have been able to ascertain them, by no means necessarily warrant the inference; for a variety of causes, some of them of a temporary, others of a more permanent character, have been actively at work, the combined operation of which goes far towards

explaining the result without our having recourse to so painful and disheartening a solution.

Independently of the facilities afforded for the due care of pauper lunatics by the greatly enlarged accommodation lately provided for them in public asylums in their own vicinity, and the encouragement held out by the legislature for placing all such lunatics under medical care in the earliest stage of their malady, it is impossible to doubt that the skill and kindness with which they are treated in such institutions have tended greatly to lengthen their lives, and have very materially diminished the average rate of mortality among them; and, as a necessary consequence, have largely increased the number of chronic, and probably incurable cases with which all our asylums, even the most spacious, are rapidly becoming filled.

It is further to be observed, that the stringent provisions of the law, by which parochial and other local authorities are required to take immediate proceedings for placing all violent and recent cases under proper care, are being every day more rigidly and systematically enforced in proportion as the machinery for the purpose becomes better understood, and with the wholesome effect of transferring to lunatic asylums a great many insane paupers who had theretofore been harboured in workhouses, or allowed to live at large on a parish allowance with their relations, where, if they were not positively maltreated and abused, their mental disorder was utterly neglected.

It is obvious, also, that the attention of medical practitioners (as well as of the public generally) has of late years been led to take a far more comprehensive, as well as scientific view of insanity in its various aspects, and to consider as properly falling under it many forms of the disease, which, from not exhibiting any strongly developed symptoms, were in former times wholly overlooked, although with a view to their cure, it might be of essential importance that the best remedial treatment should be applied to them with the utmost promptitude. It may be added, that the facilities of intercommunication supplied in these days by means of the post-office, the railway, and the press, bring to the cognizance of the humane many distressing cases of insanity among the poor which call for, and now receive, speedy relief, but which of old would probably have remained for ever unnoticed and unknown.

A good deal may also be ascribed to, and more may hereafter be expected, from the exertions of the medical officers of the different unions, whose visits to chargeable lunatics, and the quarterly returns which they make of their visits, under the 66th section of 17 and 18 Vict., cap. 97, cannot fail to bring to light, and insure the early investigation, and if need be, the removal to a suitable asylum, of many of those numerous cases of lunacy and idiotcy, more or less intractable, which are to be found among paupers who are living at large with relatives or friends.

Moreover, as we have already had occasion to state in several of our former reports, our own efforts in the course of visitation have exercised a perceptible influence in the same direction; and seconded by the efforts of the Poor-law Board, have tended strongly to inculcate on the guardians of unions and their subordinate functionaries the obligation, and to

confirm them in the practice, of removing from the workhouses to a suitable asylum, with the least possible delay, and without exception, every case of insanity in which the attack is recent, or is attended with symptoms of violence, or in which, for any other reasons, it cannot be properly managed in the workhouse.

In some districts, too, a practice has sprung up, by which persons, who have never been themselves in receipt of parochial relief, and who are not unfrequently tradesmen, or thriving artisans, have been permitted to place lunatic relatives in the county asylums, as pauper patients, under an arrangement with the guardians for afterwards reimbursing to the parish the whole, or part of the charge for their maintenance. This course of proceeding is stated to prevail to a considerable extent in the asylums of the metropolitan counties, and its effect in occupying with patients, not strictly or originally of the pauper class, the space and accommodations which were designed for others who more properly belong to it, has more than once been made the subject of complaint. It should, however, be borne in mind, that the language of the statute, the interpretation clause of which defines the term 'pauper' to mean, 'every person maintained wholly or in part by, or chargeable, to any parish, union, or county,' seems to countenance, if it does not actually justify, the practice; and that to insist upon a rigid observance of a different rule would, in most cases, either compel the party interposing, if legally liable for the maintenance of the lunatic, to throw himself as well as the patient on the parish for support, or where he was not so liable, would induce him to decline undertaking any portion of the burthen.

Another and somewhat analogous process is also steadily going on, by which many lunatics who originally belonged to the class of private patients are being continually withdrawn from it to swell the ranks of the pauper class. Nothing is more common in practice than for the relatives or friends of a person who is suddenly stricken with insanity while actively engaged in some laborious calling on which he depends for a livelihood, to undertake the cost of his maintenance and treatment as a private patient in a licensed house, for a few weeks or months, in the hope that a cure may be speedily wrought, and the necessity for resort to parochial aid may be avoided. But when that hope is disappointed, as too frequently it is, and their bounty becomes exhausted, the support of the patient is of course thrown on the parish, his name is placed upon the pauper list, and he is finally transferred, as soon as room can be found for him, to the public asylum of the district.

Indeed it may be said with truth that, except among what are termed the opulent classes, any protracted attack of insanity, from the heavy expenses which its treatment entails, and the fatal interruption which it causes to everything like active industry, seldom fails to reduce its immediate victims, and generally also their families with them, to poverty, and ultimately to pauperism. This is the main reason why, in our pauper lunatic asylums, many inmates are to be met with who have formerly held a respectable station in society, and who, in point of education and manners, are greatly superior to the inmates of a workhouse.

It is a significant fact closely connected with the same subject, that

the number of private patients, meaning by the term, patients who are maintained out of their own resources, or those of their near relatives, and nearly all of whom are now placed in registered hospitals or licensed houses, has increased at a much less rapid rate than the number of lunatic paupers,—the increase during the eight years between the 1st day of January, 1847, and the 1st of January, 1855, being from 4,065 to 4,671, or about 15 per cent. only.

If all these considerations are taken into account, it will excite little surprise that the strenuous efforts which of late years have been made in England to provide for the insane poor in public asylums should have been unable to keep pace with the growing demand for such provision, and that a large, and every year augmenting mass of chronic, and probably hopeless cases, should become accumulated in these institutions, occupying much of the available accommodation there, to the exclusion, it is to be feared, of many other cases, to which, as being of recent date, the earliest remedial treatment would be most important.

5. *Removal of Patients on recommendation of Commissioners.*—The commissioners have adopted a plan of occasionally suggesting to the friends the removal of a patient to another asylum, when the treatment of the patients appeared to be unsuccessful or his condition unsatisfactory. They observe—

"Independently of the benefit likely to arise from a different method of medical and moral treatment, it is found that the mere change of scene has invariably a tendency to interest the patient, dissociating him from those objects in connection with which his malady had continued, or perhaps increased, and placing him under the influence of new impressions, with all their attendant good consequences. Even in cases where the patient has not been removed pursuant to the recommendation, our interference has had the effect of attracting more attention to his case, and occasionally of inducing the adoption of remedies not previously resorted to, and has thus tended materially to his advantage.

"It is right to state that our efforts in this respect have been generally seconded by the friends of the patient, who have, in almost every instance, acted upon our suggestion; and we have the gratification of adding that the visiting justices have, in two instances, of their own accord, promoted the removal of patients who were resident in asylums subject to their supervision."

6. *Number of Insane Patients in England and Wales on the 1st of January*, 1856 :

	Private.			Pauper.			Total Males.	Total Females.	Total Lunatics.
	M.	F.	Total.	M.	F.	Total.			
Asylums (County) .	132	118	250	6066	7407	13,573	6298	7525	13,823
Hospitals . . .	773	743	1446	88	94	182	791	837	1628
Metropolitan Licensed Houses . .	637	603	1240	468	883	1351	1105	1486	2591
Provincial Licensed Houses . .	761	735	1506	615	480	1095	1386	1215	2601
	2243	2199	4442	7337	8864	16,201	9580	11,063	20,643
Royal Naval Hospital .	121	—	121	—	—	—	121	—	121
	2364	2199	4563	7337	8864	16,201	9701	11,063	20,764

7. *Licenses to non-professional Persons and Women.*—We subjoin, as so fully expressing our own opinion, the opening page of Dr. Bucknill's clever review of this Tenth Report of the Lunacy Commission in the 'Asylum Journal' for October, 1856 :

"The changes which have taken place in the licenses and proprietorships of licensed houses are no longer embodied in the report, but are set forth in an appendix. Our readers will be gratified to observe that all the *new* licenses have been granted to medical men. Ladies, it is true, still figure in four of the changes of proprietorship, but in three of these instances, they are the widows of the late proprietors. At Walton Lodge only the license has been transferred to Miss Eliza Squires. From these facts we gather that the evil of lady speculators in insanity is in process of cure. We say lady *speculators* advisedly, for ladies licensed to keep houses for the treatment of the insane can only be regarded as such. If insanity is a disease requiring medical treatment, ladies cannot legally or properly undertake that treatment. They are in a widely different position to medical men, who in the treatment of a special class of diseases are compelled by the law to take a license for the detention of their patients. Physicians or surgeons to whom licenses are granted are not necessarily more speculative in the maladies of their patients than any other class of medical men who invest money in their professional pursuits. The difference of position arises from the fact, that from the peculiar nature of the disease they are not medical attendants only, but also the custodians of their patients. Interference with the liberty of the subject demands the authority and surveillance of the State; and hence the need of a license. But with laymen and ladies the medical treatment of insanity is out of the question, and a license granted to them becomes merely a permission to speculate upon the profits of their maintenance. It is a remnant of the olden times when safe custody was everything, and medical treatment deemed absurd, or even an interference with the decrees of providence; a remnant, however, of which we hope soon to see the last rag abolished. It may at first

sight appear reasonable and just that upon the decease of a medical man who has invested much of his capital in purchasing or establishing a licensed house, his widow, or even his daughter should have the advantage thereof by transference of the license. But if, as a rule, lady licensees are objectionable, the fact of medical relationship cannot remove the objection. When a medical man in private practice pays the debt of nature, his widow is compelled to dispose of his interests on the best terms she can make. The license and proprietorship of a good private asylum is a very marketable commodity, and will always readily obtain a medical purchaser. If the public interests demand, as we hold they do, that all establishments for the treatment of the insane should be in the hands of medical men, private interests ought to give way. If private interests in such an important matter are to override public ones, the widow of a clergyman ought on the same principle to hold the rectory of her departed husband, and manage the parochial duties by means of curates."

II. Scotland.

In the absence of any official report on the condition of the Scotch asylums, we are fortunate in having the trustworthy and carefully prepared notes of Dr. Webster's visit to the public lunatic asylums of Scotland ('Journal of Psychological Medicine,' new series, 1, 2, and 3, January, 1856, *et seq.*) to refer to.

Dr. Webster's notes on the lunatic asylums of Scotland embrace six public institutions; respecting which some interesting statistical data, accompanied by various practical remarks, are laid before the profession. The several establishments examined were: Edinburgh, Glasgow, Perth, Dundee, Montrose, and Aberdeen.

8. *The Royal Edinburgh Asylum.*—This institution, which is of modern construction, is situated at Morningside, about a mile and a-half south-west of the Scottish metropolis. It contained 556 lunatic inmates, both private and pauper; of whom 273 were males, and 283 females. During the past year 212 new patients were admitted; 94 recovered, and 51 died; hence, the cures averaged 44·3 per cent., the deaths being 9·2 per cent., similarly calculated. Amongst the new admissions, acute mania was recognised in 50 cases, monomania affected 47 individuals, 33 were classed under dementia, 29 under melancholia, whilst 14 were examples of general paralysis; all being male patients. Intemperance figured as the most frequent cause, 33 persons, or one seventh of the whole, having become insane in consequence of their excessive potations.

9. *Glasgow Royal Asylum.*—This establishment, only very recently constructed, is situated at Gant-Navel, about four miles north-west of the city. Its situation is very beautiful—so beautiful as to remind the spectator in some degree of Windsor Castle. Both private and pauper patients are received into this asylum; 296 out of 381 inmates being classed as indigents. During the past year, 240 new patients

were received, comprising 123 male, and 117 female lunatics. Of those admitted, 107 were affected with mania, 83 exhibited monomania, including melancholia, and 50 laboured under dementia. The numbers dismissed cured were 116, or about 48 per cent.; whilst the deaths amounted to 62, or 24 per cent.; the sexes showing nearly an equal mortality. Amongst the assigned causes, as in the case at Morning-Side, an intemperate use of alcoholic drinks stood forward as pre-eminent, 45 cases, or about one fifth of the entire admissions, having been attributed to that baneful influence.

10. *Murray's Royal Asylum.*—This asylum occupies the north-western declivity of Kinoull Hill, near Perth, enjoying a magnificent prospect of the Grampian and Strathearn hills, with the valley of the river Tay intervening. The Murray Asylum receives both private and pauper patients; the aggregate numbers being 141 when Dr. Webster visited the institution; 77 being males and 64 females. No inmate was under any bodily restraint, excepting two males, who wore strong leather gloves, temporarily, to prevent them destroying their clothes; and, as at Edinburgh and Glasgow, the strait-waistcoat appeared to have become a matter of history. During the past year, 36 new patients were admitted (23 male and 13 female), 17 (6 male and 11 female) were discharged cured; and 15 (7 male and 8 female) died, 7 of the deaths being from cholera. In addition to amusing and occupying the inmates, much attention is likewise paid (here as elsewhere) to intellectual culture; so that when the patients recover their mental equilibrium, the education thus imparted may be of use afterwards. Indeed, lectures, conversaziones, musical parties, and evening entertainments, are all carried out with as much spirit as in any other asylum in the kingdom.

11. *Dundee Royal Asylum.*—This institution, founded 43 years ago, has always enjoyed a high reputation throughout Scotland. It is situated close to the town. When first opened, in 1812, accommodation was only provided for 40 patients; at present, it could receive six times that number. This enlargement has enabled the authorities to dispense with various antiquated appliances, and so to substitute important improvements. When Dr. Webster visited the Dundee asylum, its total patients, private and pauper, amounted to 212 (93 males and 119 females). During the past year, 51 new patients were admitted (26 males and 25 females). The ratio of cures ranged 41 per cent.; that of deaths being 21·57 per cent., if calculated according to the total admissions. The form of disease manifested, appeared chiefly as mania and dementia. However much many arrangements at this institution seemed worthy of commendation, one feature, in Dr. Webster's opinion, appeared highly objectionable, namely, the regulation of requiring graduated fees to be paid by different classes of patients to the physician. In all public institutions, the salaries of medical officers should be liberal, but fixed, and not varying according to the number or classes of inmates; whilst no premium ought ever to be held out for giving more professional attention to one patient than another. This system at the Dundee Asylum, in the Doctor's

opinion, required amendment; and certainly the feature described seemed unprofessional.

12. *Montrose Royal Asylum.*—This establishment is the oldest public asylum for the insane in Scotland, having been founded 74 years ago; and chiefly through the exertions of Mrs. Carnegie, a benevolent lady residing in this neighbourhood. When first opened, and during many years afterwards, it was the admiration of surrounding districts, and became almost a show-place, like Bethlem Hospital of olden times. Many changes and improvements have, however, taken place since its foundation, which would furnish an instructive history of every successive stage, characterising the varied treatment of insanity in this country. Thus, the old, dark, and badly ventilated cells—considered so useful in 1780—the confined sleeping apartments of a later period; its alcoved dormitories, constructed in the early part of this century; the more airy rooms built about 21 years past; and, lastly, the cross-windowed, thoroughly-ventilated, as also exceedingly cheerful dormitory completed only very recently, would each supply most instructive illustrations of the several different epochs, as of the varied modes of management pursued respectively. When inspected by Dr. Webster, the total inmates of the asylum amounted to 229; of whom 96 were males and 133 females. During last year, 39 male and 52 female patients were admitted. The cures amounted to 37 (the sexes being nearly equal); the deaths to 21. The very defective structure of this now venerable establishment being acknowledged—it having become almost surrounded, first, by a dock on one side, a ship-building yard opposite, a railway station on another side, and numerous buildings in its vicinity—this asylum has been condemned as no longer appropriate for receiving lunatic patients. A new building will therefore be speedily erected, in a salubrious, open, and elevated situation, not many miles from Montrose, called Sunnyside—an appropriate and truly descriptive appellation,—which, it is expected, must prove very different in many respects from its predecessor.

13. *Royal Asylum of Aberdeen.*—Although not so ancient as the institution at Montrose, this public asylum dates from 1800. Having gradually increased from a hospital, intended originally for only about 50 patients, to an average of 350; also, the existing structure displays correctly, in stone and lime, the progressive advances of the ideas entertained generally regarding receptacles for lunatics during the past half century; and hence this institution, in its various phases, presents much of interest to the psychological antiquary. When visited by Dr. Webster, the Aberdeen Asylum contained 133 male and 146 female lunatics. During the previous twelve months, 65 new patients had been admitted, 21 being male and 44 female lunatics; 11 males and 28 females were discharged cured, or 39 altogether; hence giving a ratio of 60 per cent. on the admissions. The deaths amounted to 19, consisting of 14 male and 5 female inmates, therefore, making the mortality 29·23 per cent., similarly calculated. Respecting the various special types of mental affections manifested by patients when first received, mania appeared the most frequent, almost half

being of that description. Dementia and melancholia ranked next in frequency; both these varieties having each supplied nearly one fifth respectively. Three cases were complicated with epilepsy, all females; and two males, labouring under dementia, also suffered from general paralysis. Regarding the influences exciting insanity, intemperance occupied a prominent position,—as it unfortunately does too often elsewhere;—childbirth and nursing proved a frequent cause; and hereditary predisposition embraced upwards of 38 per cent., which therefore seemed an unusually high proportion. Of the patients cured, mania constituted the largest number, 26 recoveries being of that category; of whom, half had not been affected beyond one month prior to their admission. Again, amongst the 19 deaths recorded, 12, or nearly three fifths, were examples of dementia,—only 2 of these being females; whilst paralysis was also noted in half the fatal cases last specified. No inmate was placed under any kind of personal restraint. Other interesting points were likewise specially commented upon by Dr. Webster; but one important feature seems to have attracted his special notice and approval, viz., the invariable rule which prevails throughout this institution, of leaving the doors of every day-room, communicating with its appropriate airing-court, or flower-garden, always *open* during day-time. Thus, no appearance of confinement prevailed; neither was any opening or shutting of door-locks required, nor marching out or in like soldiers at drill; but all seemed perfect freedom; hence the patients were treated almost as if sane. Of course, attendants were always present; whilst the judicious classification of inmates enabled the medical officers to carry out this excellent system more successfully. When concluding his notice of the Aberdeen Asylum, Dr. Webster alludes, in terms of deserved praise, to the permission afforded for students to attend the physician's practice, and to obtain clinical knowledge; which privilege, he wishes was accorded at all asylums; or, to quote his final phrase, *O! si sic omnes.*

14. *Dr. Webster's Suggestions for the Amendment of several Details of Government in the Scotch Asylums.* (Psych. Journal, July, 1856.)

"Regarding the official staff in lunatic establishments, at several, some change in their position might be made most advantageously. For instance, the medical superintendent should have more administrative power than he often possesses, and be also better remunerated than sometimes happens. He ought to exercise *paramount* authority in everything appertaining to the management, and moral, medical, or physical treatment of patients. He should likewise attend all meetings of managing committees, although without the privilege of voting—from being a salaried officer—in order that he might give his opinion respecting the admission of new patients, or upon any professional questions which then arose; as also to prevent all future misunderstandings. The matron—who is sometimes too highly salaried, in relation to other officials, and her actual position—appears frequently not sufficiently subordinate. This objection has been felt elsewhere; and in France, for example, where they manage many things often so well in lunatic asylums, a lady matron is almost unknown. Throughout Scotland, as also in England, sufficient attention is not invariably paid to their qualifications in the

character of housekeepers, head attendants, and as sick nurses; when the governors select for appointment this occasionally rather too self-important personage.

"Some institutions have consulting physicians; but other establishments are without such medical attendants. The system must be uniform; and there ought invariably to be both a consulting physician and surgeon whenever possible. These officers being called in consultation respectively, at the discretion and request of the medical superintendent; for which duty they ought to be remunerated liberally. There should further be always two resident medical officers in every asylum; one being the assistant, and subordinate to the resident physician. Besides which, but particularly at large establishments, I would appoint resident pupils, or 'internes,' as usually prevails in France. This constitutes one of the many good features characterising various public insane asylums of that country.

"Every building for the reception of lunatics should be disconnected with any other public establisment, whether infirmary, dispensary, or poor-house. Even in lay management, it is desirable that no kind of union obtains, much less any physical conjunction. Wherever this system exists, it may well be altered as unsuitable; from being apt to become, in various conceivable ways, disadvantageous to the lunatic institutions so situated.

"The two departments for private and pauper patients—very common in the public asylums of Scotland—as likewise the accommodation supplied in each of these divisions, must be properly distinguished, and always separate. Farther, the classification of inmates requires to be made, in the first place, more with reference to the phase of their mental malady, and less as to the pecuniary allowance received. This desirable object may not be always possible in limited or old constructed dwellings; but henceforward, at every new asylum, which shall admit patients belonging to various social grades, special attention ought to be directed towards attaining separate buildings, like those now at Morningside, having gardens attached; instead of making—which occasionally happens—a common class, composed of the poorest private patients and pauper inmates. In truth, the educated and refined should never be indescriminately mixed among the debased and unpolished, when afflicted with such a calamity as poverty, conjoined to mental alienation. I would further remark, that the impression produced on my mind, whilst visiting particular asylums was, the distinctions adopted amongst patients sometimes appeared too much based on a system of money classification—each inmate deriving advantages according to their respective payments. Hence, individuals paying similar rates, although in a different mental condition, were often associated together, irrespective of their nosological peculiarities.

"At an asylum I lately inspected abroad, a totally opposite method was adopted; but which, however, carried the treatment too far the reverse. Patients in that establishment were usually classified according to their diseased mental condition, so that inmates paying a high board became associated with those of a lower scale; the chief advantages obtained by the higher-paying classes being a better kind of fare, in the same dining-hall with the others, and from having superior furniture in

their private apartments. This mode of classification, though better in some respects than the Scottish system, has, nevertheless, a tendency to depreciate the condition of the upper class, by making them live, while in a similar mentally weak condition, with persons often of inferior education, of different habits, and varied acquirements. Both plans seem disadvantageous; but a combination of the two would be followed by fewer objections, in comparison, with the one usually adopted in North Britain."

15. *Dr. Webster's testimony to the general Character of the Scotch Public Asylums.*—"Notwithstanding the brief notice in former pages, apparently censuring some regulations now in force at particular institutions, readers must, however, always remember that it was in Scotland, where one of the earliest public asylums for the reception of lunatics, and improved treatment of mental diseases, was first founded throughout the entire United Kingdom. Besides this creditable distinction, when contrasted with other countries, it should likewise be recollected that of late considerable progress has been made in their management, highly honorable to many official functionaries. Indeed, I can justly say, in addition to occupying, amusing, and physically treating insane residents, in a manner very superior to the system pursued during former times, the intellectual culture of such patients—often previously much neglected—has been materially advanced; not only greatly to the lunatics' present comforts, but also their future advantage when discharged from the asylum. Hence, these proceedings reflect considerable credit on the gentlemen by whom such praiseworthy tasks—often most beneficial—are undertaken."

III. Ireland.

The Seventh Report of the Inspectors of Asylums in Ireland is a very able document. Our limits oblige us to confine our attention to the central criminal asylum at Dundrum. The criminal asylum for England is still *in futuro*.

16. *General Abstract of the Mental State of the Patients in the Central Lunatic Asylum, on the 31st March, 1855.*

Offences.	Males.	Females.	Total.	Mental Condition.	Males.	Females.	Total.
Homicide . . .	33	5	38	Recovered . .	15	13	28
Infanticide . . .	—	11	11	Improved . .	10	8	18
Violent Assaults . .	26	6	32	Insane . . .	54	17	71
Burglary, Arson, &c. &c.	25	20	45	Idiots . . .	5	4	9
Total . . .	84	42	126	Total . .	84	42	126

From the preceding analysis it appears that twenty-eight, or nearly a fourth of the whole number of patients, are recovered or convalescent,

fifteen of whom have become so within the last two years. Had these twenty-eight been ordinary inmates of an asylum, they would have been set free, each after a probation of about six weeks; but in the Dundrum Asylum their sojourn is much more lengthened and indefinite, as even under the most favorable circumstances we would not submit the proposition of a discharge without an unbroken restoration of mind, coupled with exemplary good conduct, for a twelvemonth, as the very shortest period.

"One patient alone, a respectable married female, who destroyed her infant whilst labouring under puerperal mania, has been liberated since the date of our last report. We shall have occasion, however, in the course of the present year, to lay before his Excellency the Lord Lieutenant, for his consideration, seven or eight cases as fit subjects for freedom. Of these cases three were acquitted of homicide; but being now for over four years under our immediate supervision, and certified by the attendant physicians to be free of every symptom of mental derangement, at the same time that they have been uniformly quiet, industrious, and well conducted, we feel justified in the course we propose—the more so as they undertake to emigrate; two having already received money for the passage out to join their families.

"Independent of the exercise of clemency itself—in a moral point of view—the very fact of opening the gates of an asylum, such as the Dundrum, and affording egress to objects deemed worthy of it, produces a beneficial and tranquillizing influence over those who remain behind, and who, if finding no prospective hope of freedom or recovery, but obliged to regard their future doom as the companions of madmen, might, from their very numbers, become most dangerous and difficult to control. There are two individuals, both respectably connected, acquitted of very aggravated assaults, who being now, and, indeed, since their transference to the asylum, quite well, might be liberated; but as the parties on whom the assaults were committed (one the father, the other a solicitor) object to their enlargement, in deference to strong personal apprehensions, and aware of the responsibility we might incur, if anything untoward subsequently took place, we are unwilling to interfere. In the course of time, however, should those justifiable fears subside, or if some arrangement can be effected by us, between the various parties, we trust they may then participate in the same consideration extended by government to others."

§ III. *Moral Management of the Insane without Mechanical Restraints.*

I. Dr. Conolly on the Principles of the Moral Management of the Insane.

Dr. Conolly's new work 'On the Treatment of the Insane without Mechanical Restraint' bears on its page all the marks of that great, good man, as for years we have now known him, in his simple truthfulness and warm sympathy with the wretched. The finished diction

and eloquence, rising often to the pathetic, are the same as in a former report ('Half-Yearly Abstract,' vol. vii) we found in his valuable monograph on the construction and government of lunatic asylums. This present publication is his legacy to the profession. The record of his life's work in the cause of humanity and of science, and the story it tells will indeed be a grand monument for his children, and children's children to point to.

In the opening chapter he well observes, "When the close of active professional exertion is felt to be approaching, and the pressure of that period, *aut jam urgentis aut certe adventantis senectutis*, becomes perceptible, a natural wish arises in the mind of any man who has been specially engaged in what he regards as a good and useful work, to leave the work, if not finished, yet secure; or, if not yet secure, at least advanced by his labours, and as little incomplete as the shortness of his life and the limitation of his opportunities permit. The accordance of such a privilege must have imposed obligations which his imperfect powers never can have fulfilled satisfactorily; and consolation under consciousness of deficient performance, can only arise from a trust in that Higher Power which allows men to be the instruments in any kind of good. Influenced by some feelings of this kind, I am anxious, in these pages, to explain as distinctly as I am able, the nature, as well as the rise and progress, of that method of treating the insane which is called the non-restraint system; so as to contribute to its preservation and further improvement, and perhaps to its wider adoption; or, at least, to prevent its being abandoned or imperfectly acted upon, or misrepresented, when those by whom it has been steadily maintained in its early days of trial and difficulty can no longer describe or defend it."

Dr. Conolly divides his work into six parts, viz.:

Part I. The Last Days of the Old Method of Treatment.
II. The First Days of the New or Non-Restraint System.
III. The New System in Private Asylums.
IV. Abolition of Mechanical Restraints in Hanwell in 1839.
V. Gradual adoption of the Non-Restraint System in the Large Asylums of England after 1839.
VI. Progress of the New System on the Continent.

We consider this work of Dr. Conolly's as of such infinite practical importance and permanent value, that we have no hesitation in devoting a portion of our limited space to a consideration of each of the several parts.

17. *The last days of the Old Method of Treatment.*—Dr. Conolly concludes his historical sketch of the past treatment of the insane with the following well-advised remarks: "What the old system of treatment by restraint really was, ought, therefore, not to be forgotten, nor should palliations of it be unreflectingly admitted. Its evils were not imaginary, but real and dreadful. In the clean, quiet, orderly galleries of well-managed asylums, the visitor now sees nothing indicative of the condition to which the apologists of restraints look back as scarcely objectionable. In the gloomy mansions in which hands and feet were

daily bound with straps or chains, and wherein chains of restraint and baths of surprise, and even whirling chains were blended, all was constantly bad. The patients were a defenceless flock, at the mercy of men and women who were habitually severe, often cruel, sometimes brutal. The evidence of this stands on record, and can neither be denied nor explained away. Cold apartments, beds of straw, meagre diet, scanty clothing, scanty bedding, darkness, pestilent air, sickness and suffering, and medical neglect—all these were common; and they must remain common, however disguised, wherever the system of restraint remains the subject of eulogy. Before the appointment of commissioners, armed with power to inspect these receptacles of madness, there was so much security and concealment, that the aggravations of loathsome dirt, of swarming vermin, and of the keeper's lash, were safely added. No mercy, no pity, no decent regard for affliction, for age, or for sex, existed. Old and young, men and women, the frantic and the melancholy, were treated worse, and more neglected, than the beasts of the field. The cells of an asylum resembled the dens of a squalid menagerie. The straw was raked out, and the food was thrown in through the bars; and exhibitions of madness were witnessed which are no longer to be found, because they were not the simple product of malady, but of malady aggravated by mismanagement."

18. *The first days of the new or Non-restraint System.*—Dr. Conolly here gives a graphic description of the first influences of a well-conducted asylum on a newly admitted patient, and points out, with great clearness, the remedial value of seclusion, and of the padded room; and then enters into many interesting details of the non-restraint system as fully carried out. Thus, he observes, "In the greater number of recent cases of mental malady the patient is unable to sleep; the days are tolerably tranquil, but in the night restless distraction comes. Whoever has known the affliction of a restless night, must know that his affliction would have received no abatement from his being tied down to his bed; and that fresh air, cold water, sitting up awhile, and diversion of mind, are the things to which he would resort for relief. The poor lunatic, equally restless, equally sleepless, and with a brain more excited, should not be deprived of these alleviations, all of which form a part of the true non-restraint system; but none of which are regarded where restraints are employed, which are indeed utterly incompatible with them. The attendant, who has fastened down his troublesome and sleepless patients in bed, retires with a satisfied mind to his supper and his rest. The patients may suffer from heat and thirst, and may shout and yell in their dispair—he heeds them not; or if he does, it is only to visit them in an angry mood, and to punish them as he chooses. The attendant, where restraints are not used, cannot leave his patients so neglected, or punish them at will. If a patient cannot lie down without distress, he is not compelled to lie down, but allowed to walk about; being supplied with soft warm shoes, and other clothing, to prevent his suffering from being out of bed. If he knocks at the door of his room, the reason of his doing so is inquired into; if he is thirsty, he has

water given to him; if he has been restless, and his bed is discomposed, the bed is made comfortable again; the patient's face and hands are cooled with water; perhaps a cup of tea or coffee, or beef-tea, or arrowroot—kept in readiness by the night attendants—is given to him, or sometimes a little tobacco; and thus the patient is refreshed in body and soothed in mind, blesses his visitors, bids them good night, and falls asleep; and thus the cries and howls which disturbed the wards so often are heard no more.

"The old system placed all violent or troublesome patients in the position of dangerous animals. The new system regards them as afflicted persons, whose brain and nerves are diseased, and who are to be restored to health, and comfort, and reason. This simple difference of view it is, which influences every particular in the arrangement of every part of an asylum for the insane."

Dr. Conolly traces throughout the several influences exerted on the insane by a comprehensive system of non-restraint; and so (he adds), "by these various appliances, some of them simply of small significance, and perhaps almost wearisome in detail, but conjointly, forming a complete system directed to one object,—the whole constitution of an asylum, and the transactions and incidents of everyday life are made remedial. Everything done by every officer, and every word spoken by the sane to the insane, is in conformity to one plan; directed by a chief physician, carried out in all its details by efficient and faithful officers, and having for its sole object the happiness of the patients, the relief or cure of all the griefs and troubles of the heart, and the restoration of composure and power to the mind. *These, in their union, constitute the system of managing the insane without mechanical restraints.*"

19. *The New System in Private Asylums.*—Dr. Conolly gives the following graphic account of the private asylums as they were under the old régime,—as we ourselves have seen them,—as, indeed, the extracts we made in a former section from the Commissioners' last Report, show that they still are. "Such houses were generally distinguishable from all the houses in the neighbourhood by their dismal appearance; their exterior was as gloomy as their interior was dirty. Heavy gates, a neglected shrubbery, windows heavily barred, doors clumsily locked, prepared the visitor for rooms which, though rooms of reception, had an air of cold discomfort and shabby finery; and, whilst the friends of the patient were shown into them, the patient himself, ushered by men of repulsive aspect, disappeared into long passages, closed to the curiosity of those who brought him there in the hope that change of scene and specific skill and kindness would promote his speedy recovery.

"From that time, and commonly for a long period, the visits of all his friends were jealously interdicted; although the patient often grieved no less than they did at such absolute and prolonged denial of what might have been a consolation to both. If the patient had previously been violent, or had on any occasion acted in a manner to excite a suspicion of a suicidal tendency, it was not unusual to resort to restraint at once, and he passed his first dreadful night in the

asylum fast bound in a strait-waistcoat. In the morning he awoke to find himself in a strange apartment, watched, rather than waited upon, by rude, ungentle keepers; all the details of his dressing disregarded, and his morning meal brought to him with little care. An ill-furnished, ill-cleaned room; a half-darkened window, looking into a wretched yard; and a scanty fire, rendered less efficient for warmth by a heavy fire-guard advancing far into the room; were the characteristics of the apartment in which he was to pass the day, either in solitude, or with some other patients more or less afflicted than himself. If he went out for exercise, it was into a dolorous space of ground; the grass plots and borders of walks half trodden into clay, unadorned by flowers, and disfigured, rather than ornamented, by torn and withering shrubs and trees. The hour of dinner brought no comfortable meal; and no social or rational conversation, and no amusements of any kind, diversified the evening. Beyond the boundaries of the lofty walls, no exercise was allowed; and within them there was no variety and no companionship, nor anything calculated to cheer the mind or soothe the feelings; so that by degrees even the hope of change and liberation became faint, and almost died away. Such I know—from observation made when the access of visitors to such establishments was difficult, and my own visits were only permitted because an official appointment qualified me to demand it—was the general condition of insane persons in the old asylums; in which the doctrine of non-restraint was years afterwards received with derision and defiance, and made the ground-work of every kind of misrepresentation; and into which the full principle of non-restraint can scarcely yet be said to have found a willing admission."

As a contrast, we subjoin the following description of a private asylum conducted on the non-restraint principle, gladly bearing testimony to our acquaintance with many such, both near London and in the provinces:

"The outward appearance of such houses is indicative of comfort; highly cultivated grounds and gardens surround them, and nothing is suggestive of a place of confinement. The patient is received as a visitor, proper refreshment is placed before him, friendly words are addressed to him, and he retires at night to a bedroom where cleanliness and all arrangements fitting his station in life reconcile him to being its occupant. If his case requires that an attendant should be near him in the night, or even in the same room with him, it is represented to him that this is done for his own safety, or for his comfort, in a strange house. In the morning, he is persuaded to get up, without threats and rough words; and his dressing is attended to as carefully as if he were in his own house. On coming down stairs, he finds a cheerful breakfast prepared for him, either with a few other patients, or with one of the proprietors or officers of the establishment. He can read the morning paper, or walk out in the grounds, or look over the new books from the library, or adjourn to the billiard-room, or join one of the walking parties or carriage parties. On returning, he is allowed, within limits of prudence and of rules necessary for the preservation of health, to choose what luncheon he will take—a small privilege, but productive of a feeling of liberty not to be undervalued. The remainder of the morning is passed

much according to his own inclination. The visits of friends to himself or the other patients, or to the proprietors, and from conversation with whom he is not debarred, diversifies much of the time, and serves to introduce new ideas without any formality of device; and at dinner-time he sits down with the proprietor or the resident physician, and perhaps a lady acting as matron, and with several of the patients, who are gentlemen of his own station, and whose neatness of dress reminds him of the propriety of his making some alteration in his own before that meal. A table well appointed, an excellent and varied dinner, wine in moderation, a dessert, and agreeable conversation, make him almost unmindful of being the inmate of an asylum; and in the evening, a party in the drawing-room, and music, and chess, and backgammon, and cards, make the hours pass agreeably until it is time to retire.

"Such, then, is the non-restraint system: by which it is found to be no less practicable, and safe, and advantageous, to control and govern, and in many cases to contribute to the cure, and in all to the improvement of the insane, in private than in public asylums: a system which meets all the difficulties arising out of the condition of the most highly endowed creature in the universe when deprived of guiding reason, and when, in proportion to his higher faculties and gifts, he has fallen from being either in reason noble, or in faculty infinite, to a condition in which he is merely the most mischievous, and dangerous, and miserable of animals. In the illustrative cases already given, the applicability of this system, which excludes all forms of mechanical coercion, has, I think, been shown in relation to every form of mental imbecility, derangement, depression, and decay. The general results are open to all observation in all our larger asylums; the increased individual comfort, the diminution of individual suffering, and the banishment of all the most repulsive features of institutions set apart for the reception of human beings disqualified for ordinary life; but now placed amidst circumstances promotive in the utmost degree of their comfort, and, in proportion to the possibilities in each case, of mental amendment and recovery."

Part IV.—*Abolition of Mechanical Restraint at Hanwell in* 1839.

Dr. Conolly gives in this part a very interesting historical record of the great movement at Hanwell, illustrated by copious extracts from his several Annual Reports for the years 1839-49.

He thus introduces the subject:

"These pages are prepared for publication at a time when no inducement exists, on my part, to introduce matter of a merely personal nature, or which does not appear to me likely to be of some use to the reader. If, therefore, I now more particularly allude to the subject of the abolition of mechanical restraints with reference to the Hanwell Asylum, it is certainly with no design of claiming for that institution, or for myself, more than, or even so much as has been already accorded by public opinion and the kindness of the medical profession. But the change of treatment adopted there seventeen years ago, and gradually effected, including the entire disuse of restraints, having been accomplished in the face of many difficulties, all of which must be incidental to such an attempt, wherever made; and the annual reports, in which all

the principles of the new system were successively laid down, and the progress of the experiment was carefully recorded, being now not to be procured; I think it most desirable to give some extracts from those made by me in the first seven years of that period, which may be regarded as having been peculiarly years of trials."

Part V treats of the gradual adoption of the non-restraint system in the large asylums of England after 1839.

20. *Gradual Advance of the New System:*

"The gradual advance of the new system has perhaps been marked by no circumstances more striking than by that of the opening of at least ten English county asylums, of considerable size, within the last few years, without any preparation being considered necessary or desirable, in any one of them, for any application of mechanical restraints. These asylums have been erected to receive, altogether, about 4000 patients; patients of all descriptions—the violent, the melancholic, and those rendered nearly intractable by long misery. It is among the glories of medical philosophy, which no false splendour enhances, and which therefore attracts little popular regard, and the physicians selected to govern these new institutions undertook to do so by moral and intellectual means alone. So much more confident were they, indeed, of the efficacy of these means than of the effects of the old measures of force, that they did not even require the windows of their asylums to be guarded; and scarcely demanded strong dresses, and the other substitutes for restraints, which had become in every successive year less required at Hanwell, and were found to be scarcely required at all in the more modern asylums in which restraints had never been known.

"The statements and sentiments contained, indeed, in every report now issued from the English county asylums, become, in every year, more uniformly gratifying."

21. *Introduction of the New System into the Private Asylums.*—Dr. Conolly, on this point, has spoken out with a boldness that does him credit:

"In the preceding record (he says) of the progressive practice of non-restraint in the English asylums, reference has chiefly been made to the large public institutions; but the example set in them has forced some degree of reform into every institution for insane persons, however private. Even in workhouses, although still deficient in the proper means of treating the many recent cases almost unavoidably sent to them, the principles of treatment are better understood than formerly, so that the number of furious cases brought into the county asylums is probably less than it used to be. The old method of at once, and indiscriminately, fastening down every troublesome patient, made many frantic who are now preserved from that dreadful aggravation of their malady, and preserved by the kindness and judgment of the medical officers of parish unions. The very great improvement in private asylums has been mainly promoted by the indefatigable industry of the Commissioners in Lunacy during the last ten years; but some of the improvement, it is but just to say, has been spontaneous on the part of the proprietors of the most

respectable of such establishments, men of high character and education, and not without a considerable sacrifice of money. It is yet to be regretted that licences cannot in all cases be restricted to persons so qualified and disposed; and that the most specious appearances, including prompt and wonderful unfastenings and dressings of the astonished patients, are too successfully employed to make the inspection of the Commissioners futile. As too many of the private asylums are still deficient in the means of non-restraint, and either superintended or visited by medical men who have taken no pains to acquaint themselves with the practice of large asylums, I have never ventured to say that mechanical restraints can be wholly abolished in them. It occasions, therefore, no great surprise, to find that the managers of only thirty-seven private asylums, out of eighty-four from which returns were made to the Commissioners, had contrived to conduct their houses without mechanical restraints when the Eighth Report was published. There is too much to fear that, in the forty-four other private asylums from which no returns were made, the discreet silence proves the preservation of most of the old abuses. The excuses offered, in the answers from some of the private establishments, for their adherence to the use of restraints, are such as would be considered unsatisfactory, and even frivolous, in any public asylum in which the system of non-restraint is understood. They consist, for the most part, of the old arguments as to the calming influence of restraints, and the economy of using them. By precisely the same arguments the employment of chains was anciently defended. It is deserving of observation, that restraints appear chiefly to be resorted to in the smaller private asylums; and that the patients are in many such establishments extremely neglected I have had most convincing proofs, some of which have been furnished in houses of considerable pretension. The most sensible of the patients in these ill-conducted places are, indeed, well treated, and are sometimes taught to praise the proprietor, or, to use the language of one of them to me, 'to show how happy they are.' They are seen by their friends in the best apartments, and addressed in terms of endearment; whilst the rest, those who are occasionally excited and abusive, those who are imbecile, or apathetic and silent, are kept in wretched abandonment. Some of these unfortunate beings, when removed to a better asylum, are found to have been in a sort of half-starved state for a length of time, and the cleanliness of the person quite neglected, the very hair being matted together for want of washing and combing. In such abandonment they cannot improve; and yet in many of these cases recovery is found to be possible under proper treatment. I have invariably found that the use of restraints in private establishments was associated with these neglects; and, as far as my own observation has extended, I have never known all the patients properly attended to so long as even a few of them were habitually subjected to mechanical coercion. Restraints and neglect may be considered as synonymous, for restraints are merely a general substitute for the thousand attentions required by troublesome patients. The obstinate adherence to a system so objectionable creates, doubtless, the strongest argument against private asylums, and in favour of their suppression. But it is too certain that, if there were no private asylums, the richer patients would be generally secluded, shut up in upper stories, or in

small habitations, and under the care of mere attendants. Happily, also, there are private asylums in which the richer patients enjoy all those advantages which are found so favorable to recovery in county asylums for the poor, combined with all the more extensive means applicable to the insane of the most cultivated classes of society. The exceptions, it is to be hoped, will gradually cease to exist."

22. *General Summary of Progress:*

Upon the whole, however, in this country, there is nothing left of the old system calculated to discourage the expectation, not only that the manner of treating insane persons without ever having recourse to restraints will soon be so far understood and appreciated as to be almost universally adopted, but that the old deceptions and abuses in private asylums and private houses must soon exist no more.

"The accomplishments and general character of the candidates for appointments in our county asylums; the admirable reports issuing every year from those institutions, recording every variety of improvement and progress; the clinical instruction already given in some of them; the generous desire evinced by the majority of the county magistrates to make proper provision for the insane poor; together with the continual and even minute attention given by the Commissioners in Lunacy to all that passes in both public and private asylums, are among the circumstances justifying very sanguine hopes of the conversation and extension of all good principles of asylum management. Frequent and liberal discussion of the various subjects connected with lunacy, and with asylums, has also lately been productive of benefits which will go on increasing.

"The varied contents of the 'Psychological Journal' established by Dr. Forbes Winslow, and conducted with great talent and energy, have attracted the attention of many general, as well as professional readers, to considerations more or less connected with the welfare of the insane. Still more recently, the formation of an association of the medical officers of asylums, has been an indication of their sincere wish to profit by the experience of each other, and to unite in advancing an elevated branch of pathology and therapeutics; for which the establishment of 'The Asylum Journal,' now so ably edited by Dr. Bucknill, affords every facility, by the diffusion of information, interesting and instructive to all readers whose duties, whether medical, or magisterial, or general, have any relation to insane persons. The general character of our public asylums, conducted chiefly by members of that association, is already honorable to us as a nation; furnishes an example which is 'a globe of precepts;' justifying the expectation that no false economy, and no delusive theories, will ever lead to the abandonment of the non-restraint system, which comprehends and bind together all the details of sound principle and humane practice. The system, as now established, will form no unimportant chapter in the history of medicine in relation to disorders of the mind. It has been carried into practical effect in an intellectual and practical age, unostentatiously, gradually, and carefully; and is, I trust, destined to endure as long as science continues to be pursued with a love of truth and a regard for the welfare of man. No longer residing in the Hanwell asylum, and no longer superintending it,

or even visiting it, I continue to live within view of the building, and its familiar trees and grounds. The sound of the bell that announces the hour of the patients' dinner still gives me pleasure, because I know that it summons the poorest creature there to a comfortable, well-prepared, and sufficient meal; and the tone of the chapel bell, coming across the narrow valley of the Brent, still remind me, morning and evening, of the well-remembered and mingled congregation of the afflicted, and who are then assembling, humble yet hopeful, and not forgotten, and not spiritually deserted.

"The contemplation of the vast exterior of the wings of the asylum still deepens the happy impression, that through all that extent of ward and gallery, kindness and watchfulness ever reign. And when my thoughts are transferred from this, my home asylum, with its thousand patients, to nearly forty large public institutions for the insane in this great country, in which are more than 13,000 patients, to whom similar comforts are afforded, and throughout which the same system prevails, I find a reward for any share I have had in promoting these things, beyond my deserving; a consolation in years of comparative inactivity, and a happiness far overbalancing the pains and troubles incidental to my life, as to that of all mortal men."

§ IV. *Pathology of Mental Disease.*

a. Morbid Anatomy.

23. *Dr. Bucknill's Researches into the Morbid Anatomy of the Brain.*—One of the most important addititions which has of late years been made to the pathology of insanity, is an original communication in the 25th No. of the 'British and Foreign Medico-Chirurgical Review,' by Dr. John Charles Bucknill, the physician of the Devon Asylum. Dr. Bucknill's views on the nature of insanity are strictly somatic. He shows that mental disease frequently does depend upon purely physical conditions; and that it is illogical and unnecessary to refer to metaphysical and speculative theories for the production of phenomena for which a sufficient cause is thus ascertained. Dr. Bucknill states that for ten years he has been in the habit of examining, yearly, the bodies of about 30 persons dying insane; that during the first six years of this period, the only impression made upon his mind was a belief in the justice of Esquirol's opinion, that no cerebral changes were observable in the insane, which were not also to be found in others in whom no insanity had existed. He gradually, however, became aware of the leading fact, that the brains of all persons dying insane, some epileptics excepted, presented well-marked appearances of degraded and deficient nutrition. For the purpose of testing this, he carefully ascertained the specific gravity of brains; and he published the 1st series of 'Pathological Observations,' in which the specific gravity of brain was noted in each case, in the year 1851. This mode of observation has been subsequently followed by many observers, but without adding to the single result—obtained by Dr.

Bucknill—that in many cases the brain substance acquires a lower specific gravity in consequence of fatty degeneration. For the purpose of accurately ascertaining the amount of cerebral atrophy, Dr. Bucknill compared the quantity of water which was required to fill the cavity of the cranium, with the quantity of water which the brain substance, when removed from the body, was capable of displacing. The difference of the two quantities gives the amount of atrophy, which varies, in the 64 cases that are tabulated in the article, from nothing up to 15 oz., the latter representing nearly one third of the entire bulk of the brain. The average amount of shrinking in the whole number of cases was $5\frac{1}{4}$ oz.; that of the epileptic cases was only $3\frac{8}{11}$ oz. In epilepsy, unaccompanied by dementia, there was no atrophy. The author remarks that, in the examination of 33 brains of epileptics, he has only once found a spiculum of bone projecting from the cranium; this is usually, but erroneously, taught to be a frequent cause of epilepsy. Cerebral atrophy increases with age; in 13 patients whose age exceeded 65 years, the average amount of atrophy was $8\frac{1}{6}$ oz., or more than 50 per cent. above that of the whole number. An interesting case is detailed of a patient who suffered from cerebral hemorrhage after the brain had fallen into a state of atrophic shrinking; the patient survived the attack of apoplexy nine months. On examination after death, a sanguineous effusion, which had become fibrinous and tough, was found *completely enveloping the cerebrum*, and extending about two inches down the spine. It was in the cavity of the arachnoid, and over the vortex of the sides of the brain it was half an inch thick. This enormous amount of cerebral hemorrhage could not have found space except around a brain previously atrophied, and a much smaller effusion of blood, pressing upon an otherwise healthy brain, usually causes death in a few hours. But in this case the blood only displaced so much serum, which was probably accommodated within the spinal sac, and thus the brain escaped a fatal pressure.

Opinions on the ultimate nature of the nutritive defect, which results in cerebral atrophy and insanity, must, necessarily, be speculative, since the ultimate nature of nutrition itself is unknown to us. Its apparent and exciting causes may be classified as follows:

1. In predisposed persons it may depend upon poverty of blood, since it is producible by deficient food and by diseases interfering with the alimentative processes; and since an analogous train of symptoms occurs during starvation.

2. It is probable that in other cases it may depend upon some derangement of "the intimate connection between the nervous and vascular systems, through which their most important functions are performed." Because it is sometimes found to be accompanied by extensive disease of the minute cerebral capillaries, the coats of which can be shown to be subject to fatty or earthy decay.

3. A third class of cases would appear to be producible by the molecular change effected by blows or violent concussions, and followed by atrophy, owing to some process as yet unknown to us. Atrophy of a testicle from a blow, without inflammation, presents an analogous instance.

4. Another class of cases are those following inflammation, and perhaps, also, following frequent or long-continued congestion. The basis of inflammatory action is an abnormal state in the mutual relationship between the blood and the tissues. That this state effects changes in the tissues which, if not speedily repaired, must be followed by conditions of degraded nutrition, is proved by the pathology of every organ in the body. The brain certainly offers no exception. The capillaries become blocked up, or their coats become spoiled for the purposes of nutritive regeneration of the tissue. It also appears probable that, during inflammatory or congestive conditions, albuminous matter or serous fluid may be effused by the capillary network into the intimate structure of the brain; thus separating its vesicles and tubules from the capillaries, and preventing the due nutrition of the elements of nerve-structure. For this form of atrophy, Dr. Bucknill suggests the prefix of *relative*, as it may exist where there is no shrinking of the brain; atrophy with shrinking being termed *positive*. The two, however, may, and frequently do, co-exist.

5. The most numerous class, however, is that which depends upon want of rest, and the special period of nutrition of the brain—namely, sleep. Want of refreshing sleep he believes to be the origin of numerous cases of insanity, dependent upon moral causes. Dr. Bucknill thinks it very probable that morbid degeneration of the brain-substance, like that of muscular tissue, takes place by the running together of its organic elements into forms of hydro-carbon. It may be that the microscope will remain incompetent to detect undoubted indications of such a change in the whole of the encephalon, since death may be inevitable before changes can occur in the intimate structure of the whole organ, grave enough to be appreciable by the assisted sight. But when portions only of the brain have undergone degenerative change, he has repeatedly and easily seen an abnormal quantity of oil globules; and in several such instances he has observed abundance of the peculiar crystals of cholesterine. The brain appears to afford no exception to the law, that one stage of regressive metamorphosis of animal tissues is that of fatty or oily compounds. The recent researches of Meckel and Henle, on the formation of spec-violet (a combination of cholesterine and other fats) during cerebral decay, afford strong confirmation of this opinion. We are unable to find space for the author's observations on the microscopic examinations of the brain, or those on the relation between sleep and nutritive repair. The table containing the weights and measurements of the encephalic organs of 63 cases of insanity examined with special reference to cerebral atrophy, is drawn up with great care and skill. One column records the breadth of the gray matter of the convolutions in each case. This was ascertained by measuring, with a pair of hair-dividers inspected through a lens, the average breadth of the least oblique, that is, the narrowest sections, made by a perpendicular slice through the hemispherical ganglion. In five cases the breadth was $\frac{9}{100}$ths of an inch. Of these, two were cases of epilepsy, one of general paralysis, one of dementia, one of melancholia. In one of these cases the cerebral shrinking was as much as $8\frac{1}{2}$ oz., in another as little as 2 oz. In

four of these cases the brains were above the average weight. In 38 instances the breadth of the gray matter was $\frac{7}{100}$ths of an inch; in the remainder it was $\frac{8}{100}$ths.

24. *Dr. Boyd's Researches on the same subject.*—In the thirty-ninth volume of the 'Medico-Chirurgical Transactions,' published Dec., 1856, there is a communication from Dr. Boyd, of the Somerset Asylum, on Atrophy of the Brain, with cases in which there were remarkable inequalities of the cerebral hemispheres, attended with hemiplegia and contraction of the limbs on the side opposite the atrophied hemisphere.

25. *Dr. Sutherland's Researches into the Pathology of the Urine in cases of Mania and Dementia.*—In the thirty-eighth volume of the 'Medico-Chirurgical Transactions,' we find an able statement, by Dr. Sutherland, of cases illustrating the pathology of mania and dementia, in a paper read before the Society on the 26th of June, 1855. Dr. Sutherland considered that it might not be uninteresting to the Fellows of the Society, if he laid before them the analysis of the mixed phosphates of the urine in cases of mania and dementia, (which was undertaken at his request by Dr. Beale, of King's College,) and if he were to compare it with the evidence of the pathology of these diseases which we derive from other sources.

"It is necessary," he continues, "to premise that in these analyses the following method was pursued. After the reaction which each specimen exhibited had been noticed, and the specific gravity taken, 500 grains of the urine were evaporated to dryness over a water bath, and the dry residue was exposed over sulphuric acid *in vacuo* for several hours, when it was carefully weighed: the weight being multiplied by 2 gave the quantity of solid matter in 1000 parts. A weighed portion of the dry extract was incinerated, and perfectly decarbonized, the saline residue was weighed, and the proportion of salts existing in the total quantity of solid matter calculated from the results of experiment.

"Another portion of urine, consisting of 1000 grains, was poured into a glass, and a quantity of solutions of chloride of calcium and ammonia were added, sufficient to precipitate the whole of the phosphoric acid as phosphate of lime. After standing for six hours, the glass being covered to exclude the air, the precipitate was thrown on a filter, well washed with water, dried, and ignited, and when the ash had become nearly white it was weighed. The proportion which the amount of salts and phosphate bore to 100 grains of solid matter was then calculated, in order that the results of each analysis might be compared with the rest. A comparison may be made between the results obtained in each case, quite independent of the variations in density of the several specimens examined.

"It is quite true that no accurate comparison can be made, unless the whole quantity of the urine passed in the twenty-four hours be obtained, and a specimen of this submitted to analysis; but in by far the greater number of cases, more especially in those of insanity, this is quite impossible, and it is also equally difficult to obtain specimens from the various patients at any particular time of the day; the only method,

TABLE I.

Form of Disease.	Acute Dementia.								Cata-lepsy.	Paralysis of the Insane.									Chronic Mania.			Chronic Dementia.		
Initials of the patient	E.A.H.	I. L.	I. L.	T. T.	T. T.	M. M.	C. B.	C. B.	H. J.	F. B.	F. B.	J. C. T.	J. C. T.	J. H.	J. H.	C. C.	C. C.	J. W.	E. K.	J. C. C.	J. S.	A. M.	H.	S. H.
Number	52	6	17	18	54	31	35	48	64	1	43	2	42	9	33	12	37	15	16	27	53	3	23	57
Date	July 5	May 10	May 17	May 27	July 15	June 2	June 2	June 30	May 11 1853	May 3	June 9	May 3	June 9	May 19	June 2	May 20	June 9	May 20	May 20	June 2	July 8	May 3	May 27	July 15
Reaction	Neutral	Feebly acid	Neutral	Feebly acid	Acid	Acid	Acid	Acid	Acid	Very acid	Acid	Acid	Feebly alkaline	Neutral	Acid	Feebly acid	Acid	Acid	Very acid	Acid	Acid	Feebly acid	Feebly acid	Feebly acid
Specific gravity	10·17	10·16	10·16	10·20	...	10·24	10·25	10·15	10·24	10·19	10·30	10·19	10·15	10·08	10·16	10·18	10·17	10·21	10·27	10.22	10·25	10·24	10·11	...
Water	971·00	969·2	973·20	957·6	939·80	945·20	931·60	963·00	944·20	...	912·6	...	959·4	988·6	958·2	959·8	959·00	958·00	944·40	949·80	929·20	...	978·4	973·00
Solid matter	29·00	30·8	26·80	42·4	60·20	54·80	68·40	37·00	55·80	...	87·4	...	40·6	11·4	41·8	40.2	41·00	42·00	55·60	50·20	70·80	...	21·60	27·00
Fixed salts	16·91	14·88	15·04	20·46	18·20	12·75	11·49	11·47	10·71	...	21·42	...	13·31	4·74	8·45	14·77	13·13	16·82	17·95	19·48	9·15	...	8·88	10·16
Phosphate of Lime precipitated by Ca. Cl. and N. H.	1·63	1·52	3·95	2·49	5·10	2·70	5·23	2·37	6·44	4·64	5·18	3·42	1·57	2·90	2·86	4·46	2·95	4·33	7·56	2·76	4·02	4·10	2·68	1·26

TABLE II.

Solid matter of the urine	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Fixed salts	58·30	48·31	56·11	48·25	30·73	23·26	16·79	31·00	19·19	...	24·50	...	1·84	41·57	20·21	36·70	32·02	35·28	32·28	38·80	12·92	...	41·11	37·62
Phosphate of lime precipitated by Ca. Cl. and N. H.	5·62	4·93	14·73	5·87	8·47	4·92	7·64	6·40	11·50	...	5·92	...	3·86	25·44	6·84	11·09	7·19	10·30	13·59	5·50	5·67	...	12·40	4·66

TABLE I.

Form of disease	Acute Mania with Paroxysms.						Intermittent.		Common Mania.				Remit-tent.	Puerperal Mania.			Hysterical Mania.	
Initials of the patient	R. E.	R. B.	G. G.	E. A.	J. C.	J. C.	W. M.	W. B.	W. M.	E. T.	E. H.	S. H.	M. D.	C. P.	S. P.	A. C.	A. G.	E. W.
Number	21	24	47	49	51	62	59	4	34	40	58	32	36	14	30	50	55	28
Date	May 27	May 27	June 30	June 30	July 5	August 2	July 15	May 8	June 2	June 9	July 15	June 2	June 9	May 20	June 2	July 5	July 15	June 2
Reaction	Acid	Feebly acid	Acid	Acid	Acid	Acid	Acid	Neutral	Acid	Acid	Acid	Acid	Acid	Very acid	Acid	Acid	Acid	Acid
Specific gravity	10·20	10·23	10·33	10·28	10·32	10·30	...	10·16	10·28	10·30	...	10·25	10·18	10·26	10·20	10·18	...	10·27
Water	945·8	943·00	908·00	931·6	925·2	924·00	927·60	964·8	932·40	915·4	965·40	938·00	946·4	941·60	957·20	965·2	931·00	924·4
Solid matter	54·2	57·60	92·00	68·4	74·8	76·00	72·40	35·2	67·60	84·6	34·60	62·00	53·6	58·40	42·80	34·8	69·00	75·6
Fixed salts	12·91	15·10	13·18	20·33	15·28	12·16	8·93	12·31	11·87	14·35	13·37	12·91	7·91	10·32	15·62	18·71	12·48	17·00
Phosphate of lime precipitated by Ca. Cl. and N. H.	6·05	7·14	9·73	4·49	8·03	6·29	3·80	1·77	3·10	3·86	1·80	3·57	3·23	7·72	2·60	1·23	4·96	5·66

TABLE II.

Solid matter of urine	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Fixed salts	23·81	26·49	14·32	29·72	20·42	16·00	12·33	349·7	17·55	16 96	12·33	20·82	14·75	17·67	36·49	53·76	18·08	22·48
Phosphate of lime precipitated by Ca. Cl. and N. H.	11·16	12·52	10·57	6·56	10·73	8·27	5·24	5·02	4·58	4·56	5·24	5·75	6·02	13·21	6·07	3·53	7·18	7·48

therefore, by which accurate conclusions can be deduced from the results of experiment is by comparing the quantities of phosphate corresponding to 100 grains of the solid matter present in each specimen of urine. I have, however, given both results in the following tables; but in order that I might compare them with those of Dr. Bence Jones, I have referred to the first table in the remarks which I have made as to the amount of phosphates found in the different cases. I might have strengthened my case had I referred to the other table; for if the proportion of phosphate to 100 grains of solid matter be compared with the symptoms existing at the time of the analysis in the different cases, we shall find that a larger proportional amount of mixed phosphates was shown by Table II to have existed in cases of acute mania. I might also have referred to Table II in the cases of J. H. and J. W., patients suffering under general paralysis, but I have found that where the specific gravity is very low, as in the case of J. H., where it was only 1008, the first table is rather to be relied upon.

"The great source of fallacy in the quantitative analysis of the phosphates in the urine originates in variations of diet, particularly in the quantity of bread taken at meal time, which contains a large proportion of alkaline phosphates; but in an hospital where all the patients have the same diet this fallacy is avoided.

"The ordinary diet of the patients in St. Luke's Hospital, at the time the analysis was made, was as follows: For male patients, 2 pints of milk-and-water gruel, and 2 oz. of bread for breakfast; 12 oz. of cooked meat, 12 oz. of potatoes, and 6 oz. of bread, and 1 pint of beer for dinner; 8 oz. of bread, 2 oz. of cheese or butter, and 1 pint of beer for supper. For females, $1\frac{1}{2}$ pint of milk and gruel, and 2 oz. of bread for breakfast; 8 oz. of cooked meat, 8 oz. of potatoes, and 6 oz. of bread, and $\frac{3}{4}$ of a pint of beer for dinner; 8 oz. of bread, 2 oz. of cheese or butter, and $\frac{3}{4}$ of a pint of beer for supper. It will be seen that the allowance of bread was the same for males and females.

"The urine was selected from patients labouring under different forms of the disease in the following proportions, viz.: 5 cases of acute mania with paroxysms, 4 of common mania, 2 of intermittent mania, 1 of remittent mania, 2 of hysterical mania, 3 of puerperal mania, 5 of acute dementia, 1 of acute dementia with catalepsy, 5 of paralysis of the insane, 3 of chronic mania, and 3 of chronic dementia; making in all 34 cases."

Remarks.—We observe that in the five cases of acute mania the proportion of phosphates to 1000 grs. was, in four, above the mean quantity found in health, and in one the proportion was nearly of the healthy standard. In Case 47 the phosphates were as high as 9·73, the specific gravity of the urine being 1033; but while we see that this amount of the phosphates is nearly equal to what Dr. Bence Jones has found in certain cases of delirium, and inflammatory action from fracture at the base of the skull, and in violent delirium at the end of phthisis, we must not too hastily conclude that acute inflammation is present in acute mania, because this theory is refuted by the analysis of the blood, by our post-mortem examinations, and by the effect of treatment.

"In Case 47 the analysis of the urine was made three days after the admission of the patient, the disease having existed only six days; in

Cases 21 and 24 the analysis was made four days after the admission of the patients, the disease in both cases having existed three months; and in Case 51 the analysis was made on the day after the symptoms had changed from tranquillity to excitement, the paroxysm having broken out in the hospital. The analyses in 49 and 59 were made in one case seventeen days, in the other eighteen days, after the admission of the patient; whilst that of Case 4 was made after the paroxysm had lasted nine weeks, and when the patient was much exhausted from its effects. It would appear, therefore, that if the urine be analysed at the commencement of a paroxysm of acute mania, a plus quantity of the phosphates will be found to exist—in some instances equal in extent to the quantity found in encephalitis; that this large secretion of the salt lasts but for a short period; and that it is modified, as in Case 49, by refusal of food, and the prolongation of the paroxysm; and that the exhaustion, which is the effect of the paroxysm, is accompanied, as in Case 4, by a minus quantity of the phosphates, as small, indeed, as that found by Dr. Bence Jones in certain cases of delirium tremens.

"The question, then, which is forced upon the mind from these results is this: Is the amount of phosphates found in the urine a measure of inflammatory action? Is it not rather a measure of the consumption of nerve force? to this question we shall return in the sequel. In the four cases of common mania, and in the case of remittent mania, no symptoms of paroxysmal excitement were present when the analysis of the urine was made, and the amount of phosphates in the urine was in all below the average of health. In Case 34 the health was much broken, in consequence of previous habits of intoxication; and E. H—, Case 58, was admitted in a very weak and emaciated condition, the insanity being accompanied with scrofulous disease of the ankle-joint; besides which, the digestion was much impaired, and he took very little food; these circumstances may in some measure account for the quantity of the phosphates being as low as 1·80. In Case 32 there were well-marked symptoms of the stage of exhaustion, indeed the case was nearly allied to one of acute dementia; upon admission, the reaction of the urine was alkaline, with deposit of the triple phosphate crystals, and as the symptoms improved the urine regained its acid reaction; this may be considered by some to favour the opinion, to which I shall afterwards have to refer, that in cases of mania the urine is generally found to be alkaline; but it is an exception to the general rule which I shall have to lay down, viz., that in the majority of cases of mania, the reaction of the urine is acid.

"In the cases of puerperal mania the analysis was made in Case 14, before the stage of excitement had passed off, about a month after the commencement of the attack, and eleven days after the patient was admitted into the hospital: and the quantitative analysis gave the amount of phosphates as 7·72. In Case 30, the analysis was made during the stage of exhaustion, nine weeks after the admission of the patient, and nineteen weeks after the commencement of the disease, and the amount of phosphates was 2·60. While in Case 50, where the disease occurred after prolonged lactation, although the patient, at the time the analysis was made, was taking abundance of food with two ounces of brandy and two pints of porter daily, to prevent her sinking

into a state of collapse, the amount of phosphates was 1·23. These cases appear to confirm the results met with in the above cases of acute mania, and would lead us to infer that, in the acute stage of mania, there is a plus quantity—in the stage of exhaustion a minus quantity, of the phosphates present in the urine.

"In the two cases of hysterical mania it was interesting to compare the manner in which the disease manifested itself in constitutions so dissimilar, the cause of the illness being the same in both. In Case 28, that is, in the anæmic weaver, we find that the phosphates amounted to 5·66; and, in the hyperæmic case, to 4·96; in the second table we find that the amount of phosphates was very nearly of the healthy standard, being in A. G —, 7·18; in E. W—, 7·48.

"In the cases of acute dementia we find the amount of phosphates to be remarkably deficient in quantity in the first table, and below the average of health in five of the analyses. When the first analysis of the urine was made, in Case 6, the patient was unconscious of the calls of nature, and inattentive to all that was passing around him: when the second analysis was made, in the same case (No. 17), there was some improvement in the symptoms; and we find the quantity of the phosphates to be 3·95, *i. e.*, 2 43 higher than in the first analysis. In Case 18, when the powers of the mind were in abeyance, the proportion of phosphates was 2·49; when they began to be again exercised, the proportion was 5·10: as a contrast to this we have the case of C. B—, 35, in which we find the proportion of phosphates, June 2d, to be 5·23; and, as the disease advanced, and when she was unable to comprehend what was said to her, the proportion was 2·37.

"The analysis of the urine of those suffering from paralysis of the insane corresponds with that made by Dr. Bence Jones, who was the first to point out the great deficiency of phosphates in this disease; and as the cases from which he derived the specimens of urine, in 1845, were under my care in the hospital, I am able to compare the two analyses with the particular symptoms in all the cases.

"The first case in our analysis, F. B—, 1, had a fair average amount of phosphates when the urine was examined in May and June: this patient recovered. The second case, J. C. T—, 2 and 42, is interesting as showing that, when the disease was in the first stage, the proportion of phosphates was 3·42, and the reaction of the urine was acid; and a month afterwards, when the disease was in the transition stage, the amount was 1·57, and the reaction of the urine was alkaline. In the third case, J. H—, 9 and 33, although the urine was examined at the commencement of a paroxysm, the proportion of phosphates amounted only to 2·90; and after the excitement had passed off, and the urine was again examined, it was 2 86; this patient was discharged uncured. In the fourth case, C. C—, 12 and 37, the amount of phosphates was at first 4·46, and, afterwards, when he became worse, it was 2·95. I should say, however, that soon after the second examination of the urine was made, a large boil appeared on his side, after which the symptoms began to improve, and he ultimately recovered. In the fifth case, the examination was made during the stage of excitement, and the proportion of phosphates was 4·33: this patient likewise recovered.

"In the first case referred to in Dr. Bence Jones's analysis, the pro-

portion of phosphates was 6·90, and the patient was well enough to be discharged on trial about a month afterwards; he, however, relapsed, and was readmitted into the hospital, August 8th; and when Dr. Jones again examined the urine, the phosphates amounted to 4·14; this patient was discharged uncured. In the second case, the patient was admitted March 7th, the paralysis became rapidly worse, and when the urine was analysed, on June 16th, the proportion of phosphates was only 2·02. Cases 3 and 4, in Dr. Jones's analysis, refer to the same patient; and although the urine was examined the second time during a paroxysm, the amount of phosphates was only 1·30. Case 5, in Dr. Bence Jones's analysis, was one where the patient had laboured under paralysis of the insane for many years, and the disease had passed into dementia; here the amount of phosphates was as low as 1·35. In these cases we observe a diminution in the amount of phosphates corresponding with the progress of the disease; and in the two analyses we have evidence that in two cases where the analysis was made during the existence of a paroxysm, it was, in Case 9, 2·90; and in Dr. Jones's second case, 2·02: if, therefore, the amount of the mixed phosphates be any measure of the expenditure of nerve force, as the above analyses appear to me to prove, we have here evidence of the small amount of phosphoric acid possessed by the atrophied brain in white softening, or œdema of that organ; and we might ask, whether there be not something analogous to this in those cases of delirium tremens where an equally small amount of the phosphates is found in the urine; and whether it be not the atrophy and œdema of the brain which is the cause of such diminution, and not the peculiar action of alcohol upon nervous matter, which action is, in all probability, neutralized by the vital power of the brain itself.

"The cases of chronic mania, and chronic dementia, are so far interesting, as they exhibit an amount of the phosphate below the average in every case but one, viz., that of E. K—, 16, whose powers of mind were very little impaired by the existence of her disease, and who was discharged "on trial" from the hospital on the 22d instant.

"If we compare the reaction of the urine in the above cases of acute mania, and chronic dementia, we shall find that in recent cases of mania it was acid seventeen times, feebly acid twice, neutral once; whereas, in chronic cases, and those complicated with general paralysis, it was acid nine times, feebly acid four times, neutral once, and feebly alkaline once. Erlenmayer has stated that the urine is generally alkaline in recent cases of mania ('De Urina Maniacorum,' 1844); this does not correspond with my experience; I find that in 125 cases of recent mania admitted during two years under my care into St. Luke's Hospital, the urine was acid in 111 cases, neutral in 1, alkaline in 13; being in the proportion of $88\frac{4}{5}$ per cent. acid, $10\frac{1}{5}$ alkaline, and, omitting fractions, 1 neutral; whereas in 100 cases of chronic mania and dementia, under my care at the same time, the urine was acid in 61, neutral in 6, alkaline in 33; and in 25 cases of paralysis of the insane, the reaction of the urine was acid in 12, neutral in 1, alkaline in 12.

"But we must not infer that it is always a bad symptom when we find the urine alkaline, or an alternation of the acid and alkaline reaction, as in the cases of fracture of the spine, mentioned by Sir B. Brodie; as

it is not an evidence of the existence of organic disease of the brain in cases of mania, but rather of exhaustion of the nervous centres; and in this respect it is analogous to the urine of fever; for, as Simon has observed, 'in proportion as fever assumes a torpid character, and the vital powers become depressed, the urine becomes clearer, loses its acidity, becomes neutral, and in a very short time alkaline.'

"If we compare the analysis of the urine in the above cases of mania and dementia, with that of the brain and the blood, it will appear that they correspond in a very interesting manner: we find in the brain of infancy and old age, according to L'Heritié, a minus quantity of albumen, cerebral fat, and phosphorus, as compared with that of adults, and a minus quantity of the same substances in the brains of idiots; whereas there is a plus quantity of phosphorus, according to M. Conerbe, in the brains of those suffering from acute mania. In the quantitative analysis of the blood of acute mania, published by Hittorf, we find a deficiency of blood corpuscles, and a slight increase of fibrin and albumen; and Michéa states that, in cases of paralysis of the insane, he found the albumen to be remarkably deficient in the blood in nearly one third of the cases, and that there was an augmentation of the blood globules, and an absolute diminution of the fibrin. The tissue from which the phosphates are eliminated is the albuminous, and in the urine we find a plus quantity of the mixed phosphates at the commencement of the paroxysm, and a minus quantity in acute dementia, and in the third stage of paralysis of the insane.

"This result corresponds also with the symptoms which we observe during life; for in dementia, when the brain is in a passive state, there is less interference with the functions of the nerves of organic life, and digestion goes on much as in health; but in acute mania there is great disturbance in the functions of primary and secondary assimilation, as is evident from the symptoms of constipation, the unhealthy evacuations, and the deposits of uric acid and urate of ammonia in the urine; the emaciation also which takes place during the acute stage of mania is sometimes very great; and the patients at St. Luke's Hospital sometimes weigh many pounds heavier at the time of their discharge, as compared with their weight upon admission. The fat appears to be absorbed from all parts of the body to supply the brain; for, in acute mania, the production of nerve force is very rapid, the increased flow of blood, which is the result, at first stimulates the intellect beyond its ordinary power, when ideas pass through the mind with unaccustomed rapidity; as the disease advances, incoherence is the result, in consequence of the multiplicity of thoughts which pass through the patient's mind making it impossible for him to give utterance to all; the cell-nuclei are thrown into a state of unhealthy activity, there is little repose night or day, and want of sleep, as is well known, is one of the most common symptoms; there is a constant demand upon the blood for the albuminous and oleaginous principles; the whole nervous system partakes of this activity, and feels its influence, and is thrown into a state analogous to that of electric tension; not only are the hemispheric ganglia involved, but the fibrous structure conveys the impulse to the peripheral extremities of the nerves, producing hyperæsthesia and pseudæsthesia: the nerves of organic life likewise sympathise; the false perceptions of the nerves of

special sense, and of those of sensation, and the errors of nutrition and secretion, are sufficient evidence of this; and when the disease arrives at its highest point, and a paroxysm occurs, we have then to deal with another force, which becomes equally unmanageable—I mean the force developed by muscular contractions—which, as Matteucci has shown, is quite independent of the nervous system; these two forces acting and reacting upon each other, produce such a state of nervous erethism, that I have seen patients with symptoms resembling those of an animal poisoned by strychnine; the fury of the passions and the movements of the limbs are quite beyond their control; and the muscular force is developed to such an extent, that they sometimes perform feats of strength which they would have been quite unequal to when well.

"The symptoms of acute dementia form a striking contrast to the paroxysm of mania. The patient never speaks, he is apparently unconscious of all that passes around him, and his movements are automatic; the pulse is weak, sometimes scarcely perceptible; the extremities are cold and livid; the respiration is chiefly abdominal, and slower than in health. In a case at present under my care, the index of Dr. Quain's stethometer showed that the thorax was raised during each inspiration only five degrees instead of fifty, while the abdominal respiration ranged from thirty to forty-five degrees; the number of respirations being sixteen in the minute. In these cases there is little consumption of nervous force, whereas in the dementia of general paralysis there is little supply; for the atrophy and œdema of the brain must prevent the cell-nuclei from being formed in sufficient quantity, and the blood, as has been shown, is not able to furnish the requisite amount of albumen. But this happens in the last stage of the disease; for if the nervous system and the blood were affected in the same way in every case, we should not be able, as in some of the cases given above, to quote instances of recovery; and medical treatment would be of no avail. The fact has been overlooked, that there is more than one species of paralysis of the insane; the scrofulous species differs from that which is the result of delirium tremens; that which is accompanied with anæmia and local congestion differs from that with hyperæmia and hypertrophy of the left ventricle of the heart; and that species which is the result of atheromatous and bony deposits of the blood-vessels of the brain, no less than the hardening, differs from the softening of the brain found in these cases, in our post-mortem examinations. Probably the reason why Dr. Conolly has spoken so strongly as to the incurable nature of paralysis of the insane is, that patients labouring under this disease are seldom admitted into Hanwell during its first stage.

"If, then, we compare the plus quantity of the mixed phosphates secreted in the commencement of the paroxysm of acute mania, and the minus quantity found in acute dementia, and in the third stage of paralysis of the insane, with the symptoms during life, it gives us, to a certain extent, a measure of the expenditure of nervous force. We know that this force is intimately associated with all the operations of the mind; we believe it to be the connecting link in its relation with matter, being probably the highest form in which matter is found; over-exertion of intellect exhausts its energies, no less than over-exertion of body tends to impair its supplies. It is now generally admitted, that the cell-nuclei

found in the nervous centres, and at the extremities of the afferent nerves, are the sources of nervous force, and that this force is correlated with electricity; therefore, the subject of electricity becomes of greater importance to us in our investigations, whether physiological or pathological. It has long been observed that sudden variations in the temperature and weight of the atmosphere exert a powerful influence upon all nervous disorders; and that the partial distribution of light and heat have favoured the production of insanity on the northern side of mountainous districts. The effects, also, of the Siroc of the Mediterranean, and of the viento norte of Buenos Ayres, are well known; and we are able to trace a connection between disorders of the nervous system and epidemic diseases. But whether the magnetic variations have any influence upon nervous disorders, is still a problem to be solved by future investigations. Schwabe has proved that the epochs of maxima and minima in the variations of the solar spots, are identical with those which have been assigned to the magnetic variations; but Colonel Sabine has shown that he has not been able to derive, from the indications of the thermometer and barometer, any sensible connection between climatic conditions and the number of spots."

The conclusions which may be drawn from the above analysis of the mixed phosphates in the urine of cases of mania and dementia, and the comparison of this analysis with that of the brain and of the blood, and of the symptoms in similar cases, are as follows:

"1. A plus quantity of phosphates exists in the urine in the paroxysms of acute mania.

"2. A minus quantity exists in the stage of exhaustion in mania, in acute dementia, and in the third stage of paralysis of the insane.

"3. The plus and minus quantities of phosphates in the urine correspond with the quantitative analysis of the brain and of the blood; for a plus quantity of phosphorus is found in the brain, and a slight excess of albumen in the blood, of maniacal patients; and a minus quantity of phosphorus and albumen are found in the brains of idiots, and a minus quantity of albumen in the blood of paralysis of the insane.

"4. The plus quantity of phosphates in the urine of cases of acute mania, denotes the expenditure of nervous force, and is not a proof of the existence of acute inflammation in this disease."

(*To be continued.*)

BOOKS, &c., RECEIVED.

1. A Treatise on Therapeutics and Pharmacology or Materia Medica. By George B. Wood, M.D., President of the College of Physicians, Philadelphia, Professor of Medicine in the University of Pennsylvania, &c. 8vo, Philadelphia and London, 2 vols., 1856, pp. 1741.
2. On some Points in the Anatomy of the Liver. By Lionel G. Beale, M.B., Professor of Physiology in King's College, &c. 8vo, London, 1856, pp. 80.
3. On the Nature and Treatment of Club-foot. By B. E. Brodhurst, Assistant Surgeon to the Royal Orthopædic Hospital. 8vo, London, 1856, pp. 134.
4. Medico-Chirurgical Transactions, vol. xxxix. 8vo, London, 1856, pp. 356.
5. On the Composition of Food and How it is Adulterated. By W. Marcet, M.D., Assistant Physician to the Westminster Hospital, &c, 8vo, London, 1856, pp. 166.
6. A Review of the Present State of Uterine Pathology. By J. Henry Bennett, M.D., Physician-Accoucheur to the Royal Free Hospital, &c. 8vo, London, 1856, pp. 99.
7. Aperçu du Système Spinal. Par Marshall Hall, F.R.S. 8vo, Paris, 1855, pp. 246.
8. Norsk Magazin fur Lægevidenskaben. x. Bind. Heft 5, 6, 7, 8, Christiania, 1856.
9. The Administration of Medical Relief to the Out-Patients of Hospitals. By R. E. Whitfield, Esq. pp. 15.
10. On the Faulty Construction and Ventilation of Hospitals generally. By John Robertson, Esq. Pamphlet, pp. 17.
11. Remarks on the prevalent Fever of Bellary and Mysore. By J. Day, Esq., Assistant-Surgeon in the Madras N. S. pp. 32.
12. Remarks on the Lunacy Laws and Asylums in Scotland and France. By J. Webster, M.D., F.R S. pp. 16.
13. Clinical Observations on Pneumonia, and its Treatment by Quinine. By S. Gordon, M.B., Physician to the Whitworth Hospital, &c. pp. 20.
14. Recherches sur les Monorchides et les Cryptorchides chez l'Homme. Par M. Ernest Godard. 8vo, Paris, 1856 pp. 38.
15. An Ovarian Tumour weighing 106 pounds, &c. By George D. Gebb, M.D., Physician to the West London Dispensary, &c. 8vo, London, 1856, pp. 16.
16. The Pathology of the Diseases of the Army in the East. By R. D. Lyons, M.B., and W. Aitkin, M.D. 4to, London, 1856, pp. 120. (Published by Authority.)
17. A Practical Treatise on Disorders of the Stomach with Fermentation, &c. By James Turnbull, M.D., Physician to the Royal Liverpool Infirmary, &c. 8vo, London, 1856, pp. 160.
18. Medical Testimony and Evidence in Cases of Lunacy (the Croonian Lectures, 1853). By Thomas Mayo, M.D., F.R.S. 8vo, London, 1854. Also, a Supplement to these Lectures, by the Author. 1856.
19. The Treatment of the Insane without Mechanical Restraint. By John Conolly, M.D., D.C.L. 8vo, London, 1856.

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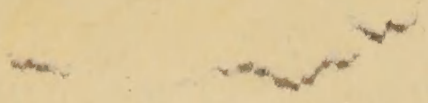
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